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Improving Millennium Bank's Personal Finance Manager

**How to cater a more useful, usable and tech-advanced tool to gain competitive
advantage in the Polish banking competitive arena**

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TITLE

Millennium Bank's Personal Finance Manager and how to build competitive advantage by "digitalizing" clients through an improvement of this product placed on the bank's online platform.

ABSTRACT

This dissertation reviews and analyzes the best practices in the Online banking business, namely in those which concern the Personal Finance Manager (PFM) tools for clients. Poland is currently a European leading market in Online banking, ranking amongst the most technologically advanced platforms in the Continent and being considered very reliable when it comes to security of payments. Considering that the Polish banking sector reached saturation and further growth should not be expected¹, industry-experts predict that profitability will be gained mostly through cost-savings deriving from less face-to-face contact in customer support which will gradually be replaced by online contact channels. This paper focuses on improving the Personal Finance Manager's (PFM for short) functions of Millenium Bank's online platform (which directly or indirectly correspond to money transactions) and aims at analyzing how to develop competitive advantage through a more feature-rich easy-to-use and intuitive online platform (hence the execution of a study on international best practices concerning PFM).

A study on the top 5 Polish retail banks is conducted to understand how advanced Millennium's PFM is in relation with competition (whose results are compared with the aforementioned analysis on the best practices applied by internationally leading PFMs). Next, and on the basis of both these elements, specific suggestions were reached to improve the

¹ Sawa, Lukasz. (2013). *Online banking in Poland – European leader in technology and safety*. Available: <http://msp.gov.pl/en/polish-economy/economic-news/4439,Online-banking-in-Poland-European-leader-in-technology-and-safety.print>. Last accessed 27th March 2015. Quote: "Polish online banking services are amongst the most technologically advanced in Europe and rank very high in terms of security of payments. Although the wider banking sector reaches saturation, Polish e-banking still has a very rosy outlook for further growth as the younger generation will dominate the market in the future."

This position is corroborated by the rating agency FITCH, which in 2014 gave a stable outlook for the banking sector in 2015. Gombert, Andrew. (2014). DOCUMENTATION: Polish banks enjoy stable sector outlook for 2015 - Fitch. Available: <http://www.gpwinfstrefa.pl/GPWIS2/pl/index/news/info/656795,documentation:-polish-banks-enjoy-stable-sector-outlook-for-2015---fitch>. Last accessed 27th March 2015.

actual PFM tool. All in all, the objective of the report is to condense all the gathered information into a set of recommendations for Millennium to use in the development of their new PFM platform. The task was of special importance for two reasons: it is estimated that banks' profitability in the future will be mostly driven by the "digitalization of clients" (resulting in cost savings for the institutions) rather than by the acquisition of new ones (which means that online banking platforms ought to be appealing for customers); Millennium's homebanking platform is already very advanced for Polish and even European standards, thus being hard to improve, even marginally.

The findings of this review are described in the Conclusions section of this Work Project.

Keywords: Personal Finance Manager, Online-driven profitability, Online Banking

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INTRODUCTION

The Polish economy has been a case of success for many years after its accession to the European Union (E.U.), with an annual economic growth rate before the 2008 global crisis of 6%². In the peak of the crisis the Polish economy still sustained itself by growing 1,6% while the E.U. as an economic block dropped 4,5%. The aftermath of the crisis for Poland has been positive and now the economy is growing at an-above 3% rate. This growth has been displayed in the banking sector, which has been experiencing steady growth over the years and decades after the communist era (which ended in 1989). Indeed, during the 1990s, Poland was the subject of Foreign Direct Investment more than any other former socialist country in Europe, from an yearly amount of \$89 Million in 1990 to \$10,6 Billion in 2000.³ The main reasons for

² Polish economy is the strongest amongst Eastern European ones
http://www.forbes.com/2007/09/24/poland-electrabel-vattenfall-markets-equity-cx_vr_0924markets10.html

³ <http://www.britannica.com/EBchecked/topic/466681/Poland/28251/Finance> (updated on 15-1-2015)

this significant jump in FDI was the legal reforms introduced by the Government, privatization of banks and recapitalization of others which switched the economy to a more market-orientated system. Also, the prospect of entering the European Union (which materialized in 2004) drove the necessary reforms and a bigger tendency to trade with Western European countries. These led to a steady and healthy growth of the Polish economy, which reciprocated in the rise of people's standard of living: since 2004, the GDP per capita (based on purchasing power parity) rose from 15.258,28 US\$ to 22.513,32 US\$ in 2013 (which represents a growth of 47,55%).⁴

Indeed, as the economy's growth anchors the rising Polish standard-of-living, more people will need to be banked, and more of these will search for sophisticated products.⁵ Homebanking and Mobile Banking represent the most sophisticated user interface in banking and go right along the necessities of Polish customers. The convenience of having a wide variety of operations (transactions, budgeting, etc.) available at any time through any digital platform with internet-access by itself makes the service very appealing for the customer. For the actual bank the very same service is very appealing because of the cost-savings it produces: less people employed to service customers face-to-face, replaced by tech-fueled operations and processes.

The fact that 77% of adult Poles have an account at a commercial or cooperative bank, whereas only 51% of these own an online-bank account and even less (45,99%) are active online banking users⁶ means there is still room for shifting traditional clients into digitalized ones.

Therefore, and considering the constant-innovative nature of the domestic banking sector, Polish banks should carry on investing on innovation in their online platforms to gain

⁴ Data on GDP p/capita was gathered from the World Bank (<http://www.tradingeconomics.com/poland/gdp-per-capita-ppp#>). Growth rate of 47,55% computed as follows: $(22.513,32 \$ - 15.258,28 \$) / 15.258,28 \$$

⁵ IMF. (2010). Banking on Poland. Available: www.ifre.com/banking-on-poland/605512.fullarticle. Last accessed 20th February 2015.

⁶ The percentage data mentioned is taken from a Polish Ministry of the Treasury report entitled Online Banking in Poland - European leader in Technology and Safety. The value 45,99% (11,377,000/24,739,000) was gotten dividing the nr. of active users by the total people in working age (18-65 yr.). By active online banking users we assume those who access their homebanking or mobile banking platforms at least once a month.

competitive advantage and raise profits by driving customer-service costs down. Millennium Bank is no exception to this rule.

Today, Millennium's advanced online platform Millenet enables a wide roll of operations: personal budgeting (consult one's account record of expenses, revenues and project these for the future); transaction-based functionalities (transfer to another account through whether inside or out of the country, easy-transfer through email or mobile, tax payments, etc.); plan savings according to one's expected revenues and objectives; check and adhere to Millennium's offer of financial products. Still, the layout and processes that these operations entail can always be improved and made more intuitive, and the range of operations one can do online can also be widened. Plus, the platforms in which the service is provided should broaden with the rise of the Wearables tech-business⁷.

What will determine customer profitability in the short-term is how quickly will Millennium implement smart changes that will not just improve the customer experience and satisfaction but concentrate more customer-centric services in its online platform. A successful strategy on this front would bring more traditional clients to the online sphere - reducing cost of serving these in physical outlets or through the phone, naturally expensive channels of service when compared with online - while growing Customer Retention.

This Work-project studies holistically the topic of PFM, concentrating its analysis in Millenet's PFM, suggesting steps to improve it by proposing a new way of drawing it, thus turning such in a more useful appliance for digital customers. Eventually, the goal is provide profit-enhancement suggestions driven by cost-savings.

THEORETICAL FRAMEWORK

Online Banking comprises all banking activities that a client can execute via Internet.⁸ This is a dominant trend in today's banking industry due to the commodity it caters the client (who can

⁷ Unknown author. (2014). Wearable Technology Report. Available: <http://www.idtechex.com/research/reports/wearable-technology-2014-2024-technologies-markets-forecasts-000379.asp>. Last accessed 21st February 2015.

⁸ Unknown author. (2011). Online Banking. Available: <http://www.investopedia.com/terms/o/onlinebanking.asp>. Last accessed 24th May 2015.

access an ever-growing paraphernalia of services from his various tech-devices) and the cost-efficiency it brings the bank institution by reducing the costs of serving clients directly.

Nowadays, an online-potential-conscious bank will provide the majority of services a client can enjoy in a branch. This would include opening a debit or credit card account, transfer money to another account, create a Savings Plan, consult an account's history of transactions, invest the available money in Financial Products and so forth.

Under this umbrella of various services, one can find the Personal Finance Manager. A Personal Finance Manager tool is a “software, website, widget or app used to help track financial activities across multiple financial institutions or multiple accounts in the same institution”.⁹ Its role is to rationally manage clients' expenses and savings by providing detailed information on the client's account and financial behavior and then budgeting on the basis of this information. In today's day and age, a Personal Finance Manager tool can be presented in a website accessible by any browser, as a mobile smartphone application and as a smartwatch application¹⁰. A generally-accepted-as-complete PFM¹¹ would, today, present the following characteristics: Current Balance, Spendings and Income categorization, Graphical illustration of the account's balance, Transaction history, Bill Split, Budget generation, Savings Plan generation, Calendarization of future transactions & cash availability, Organized graphical representation of incomes, spendings and direct comparison on a given time period.

These are just the basics of a PFM, as more features are being implemented by banks¹² (big, established ones and start-ups as well) on the vanguard of technology, which are quickly becoming vastly-adopted trends in the business: Safe-to-spend notion¹³ (=Available balance – Goals – Scheduled Activities in an upcoming time horizon), User "Tagging" transactions,

⁹ Unknown author. (2010). Personal Finance Access Mode. Available: <http://helpcenter.capitalone360.com/Topic.aspx?category=FINANCE1>. Last accessed 15th May 2015.

¹⁰ The later option, as of nowadays, focuses on day-to-day budgeting advisory and is most developed for Android-powered smartwatches (given that the Apple Watch came out later in time). As app developers get to know the generally accepted as more-advanced Apple platform, it is expected that the PFM apps themselves will expand in scope of operations catered.

¹¹ Although the considerations for what is a decent PFM in today's world certainly differ from user to user, these are the features most top retail banks provide and the ones I personally consider necessary for the service to be of real use to the customer.

¹² For detailed information, check slide 3 of Annex 6 of this essay

¹³ The Safe-to-Spend notion was introduced by the platform Simple.com and is computed by the Available Balance minus the money needed for Saving Goals established minus Schedules payments or other expenditure activities for the next 30 days.

Create a Saving Goal and automatically put money aside each day to achieve it in the established time, Near-Field Communication (NFC) payments, Qualitative feedback on spending habits vs. Income (on real-time) and Computation of a monthly spending average to compare the current month's spending with the average.

METHODOLOGY

This work project followed a research methodology heavily anchored on a benchmarking analysis, instrumental in identifying how Millennium stands in comparison with its domestic competition, namely the 5 biggest banks in Poland by asset-size (Millennium stands as the 6th biggest one). The benchmark focuses on bigger banks because these are considered to be, historically, the most successful in the market and Millennium wants to consolidate its position amongst that group. Also, Millennium displays a long-term vision of growing its share in the domestic market without the use of Mergers or Acquisitions¹⁴, which most likely requires a growth in the bank's assets. But Millennium's vision concerning the PFM goes beyond being the most technologically advanced homebanking platform in the domestic market; it aims at providing a world-class top-notch personal finance tool which provides customers in Poland the most updated trends in PFM. That is why the benchmarking exercise was then followed by research on internationally-placed innovative banks (North-american start-ups, New Zealander banks, etc.). Indeed, for a successful completion of this study, there should not only be a notion about where Millennium stands today but also the specific direction of its PFM improvements, which can be in large scale inspired by what is happening at a worldwide level the sources of innovation in the worldwide PFM market. What is being done by the most advanced banks and other financial institutions is what will shape the (ever-evolving) trends for the future. Gathering knowledge on this front is what will sparkle ideas on how to improve the PFM according to what the customers around the globe are valuing.

These suggestions were then studied from a financial standpoint, being the Return-on-Investment the measure of choice to confirm the financial validity of the improvements.

¹⁴ Nuno Carregueiro. (2015). Banco polaco do BCP prevê distribuir até 50% dos lucros aos accionistas. Available: http://www.jornaldenegocios.pt/empresas/detalhe/banco_polaco_do_bcp_preve_distribuir_ate_50_dos_lucros_aos_accionistas.html. Last accessed 22nd February 2015.

Last but not least, a survey analysis was conducted for reasons of diligence.¹⁵ Indeed, because the service is ultimately destined for clients, it's only right to have clients and potential clients surveyed on their online banking user experience and consider their opinion on what should be changed for the better in what regards the online bank's role in management of personal finance. After this exercise, the ideas aforementioned should be compared with the surveyed customer preferences to assess if there is an alignment between the two. The stronger and wider the alignment, the better chance those ideas will turn into successful suggestions of ways to improve the PFM tool.

THE COMPANY MILLENNIUM BANK

Millennium Bank S.A. is a Polish commercial bank with its registered headquarters in the country's capital city, Warsaw. It currently is the country's sixth largest bank in terms of asset volume and is expected that it will continue to be so in the next couple of years (see table 1 and table 2 in Annex -1 for detailed information on the Polish's 6 biggest banks' assets). Millennium was originally called Bank Inicjatyw Gospodarczych BIG SA, and emerged in 1989 (just as the Polish economy was transitioning from a Government-controlled economy to a market economy) as a bank for corporate clients. As the years went by, Millennium widened the focus of its activities to accommodate private customers' needs. Today, it works with 1,3 Million active private customers and 13 Thousand corporate clients who use the nationwide network of 423 branches as well as online, phone and mobile banking.¹⁶

As of today, Millennium Bank holds 423 physical outlets spread through Poland and 5 770 employees.¹⁷

Millennium's major shareholder (with 50,1% of the bank's equity¹⁸) is the Portuguese commercial bank Banco Comercial Portugues (BCP). Until very recently, the latter bank

¹⁵ The results of this survey analysis, which is available in Annex 8 are favorable to the PFM-improvement suggestions here-presented. Because the sample is fairly small (36 answers gotten), this thesis' author suggests the sample is widened in the future, to achieve more statistically-relevant results.

¹⁶ Information concerning history of the bank and current number of clients and branches were taken from Millennium's Management Board Report of 31 December 2014, assessable here: <http://www.bankmillennium.pl/en/about-the-bank/investor-relations/financial-reports/annual-reports>

¹⁷ These numbers are according to Millennium Bank's Management Board Report, dated 31st December 2014, last consulted by this thesis' author in 22 May 2015.

retained a share of 65,5% on the Polish subsidiary, part of which was sold to “boost BCP’s capital”, after failing Europe-wide health checks. Despite the selling of this significant stake of capital the strategic interest in Bank Millennium wasn’t jeopardized and the majority control of equity was indeed kept.

In what concerns Market Capitalization, the total value of shares outstanding to 8,61 Billion PLN in 23 of February of 2015.¹⁹

Millennium’s product and service line includes “personal accounts, debit and credit cards, overdraft limits, cash and mortgage loans, saving accounts, term deposits, investment funds, brokerage services, structured products and insurance products”²⁰. Its areas of business are: Retail Banking – destined for individual consumers and small firms; Corporate Banking – destined to corporate customers; and Treasury and Investment operations, which cater financial instruments to any type of customer.

The bank’s brand relies on the traditionally conservative Polish banking values (mostly to ensure trust, the most pivotal value on which every successful bank bases itself on). But as much as Millennium wants to stay true to those values, it also wants to showcase an image of modernity and of being a customer-centric organization.

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PRODUCT DESCRIPTION

Millennium’s PFM is a behavioral data-anchored platform which ensures a detailed view of one’s financial operations and how to better allocate money in order to accomplish the user’s stated objectives. The tool is built-in Millenet (the Marketing name of the bank’s online platform), an internet platform destined for every individual client or corporation that has an

18 Barroso, Rui. (March 2015). BCP vende mais de 15% do polaco Bank Millennium. Available: http://economico.sapo.pt/noticias/bcp-vende-mais-de-15-do-polaco-bank-millennium_214812.html. Last accessed 27th March 2015.

19 <https://www.google.com/finance?cid=1018913809645007> (last accessed on 28th March 2015)

20 Description by Thomson Reuters: <https://www.google.com/finance?cid=1018913809645007>

21 These numbers are according to Millennium Bank’s Management Board Report, dated 31st December 2014, last consulted by this thesis’ author in 22 May 2015.

account at the Millennium Bank. One can access the PFM by clicking on the My Finances tab right next to the Home Page tab (My Finances > Finance Manager).²²

The service aims at catering the user a seamless and intuitive way of consulting his/her Millennium's bank accounts, managing his money (through the Personal Finance Manager tool) carrying out money transfers, open a new account, ask for a loan, invest in funds and pay bills. The service is considered one of the most advanced (if not the most advanced) homebanking systems in Poland, having been awarded the 1st place in the 2013 annual Newsweek magazine ranking of most customer-friendly banks in Poland.

Millenet's PFM is divided in 4 sections:

1. **Main Dashboard**
2. **Transactions**
3. **Budget**
4. **Reports**

1. The Main Dashboard displays a series of options: a balance of the total income and spendings in a given time period defined by the client, a pie chart of automatically categorized spending, a calendarization of transactions (with the possibility of adding notes to these) and, if savings plans or budgets were created, details about these. On the top of all this, on the page, there is a calendar wherein the user can change the time period for which the just-described information that follows is referred. (see Annex 1 for screenshots)

2. The Transactions tab lists every expense and income in the accounts associated with the user, dated and categorized, up to 12 months back in time. Although the system automatically categorizes the expenses, the user can re-arrange these categories as he pleases in the Settings tab (changing categories of one transactions or adding new sub-categories). (see Annex 2 for screenshots)

3. The Budget tab allows the user to define his expenses and define the amount of money he wants to allocate to each category of expenses. The platform includes a graphical

²² Available screenshot in Annex 2

representation of the money spent and the percentage of the limit defined that was already spent. This graphic is available at the Your Budget sub-tab. The other sub-tabs are the Savings Plan and Planner, an interactive calendar to consult upcoming scheduled transactions. (see Annex 3 for screenshots)

4. The Reports tab is divided into 3 tabs: Spendings, Income and Cash-Flow. Spendings either shows a pie chart of categorized expenses or a bar chart to see expenses overtime. Income displays the same graphics, this time precisely for income. The Cash-Flow tab shows every cash-flow in a given time period in bars. (see Annex 4 for screenshots)

As it was described previously, the Personal Finance Manager is a software aiming at helping users manage their money in a rational way. However, the specifics of each bank's PFM may differ greatly, as some are more technologically-oriented than others. Millennium Bank places amongst the European leading PFM providers, thus its Value Proposition is quite ambitious: to cater a service that makes the user aware of money spent, money available and how to allocate it in the best way possible to fulfill his/her needs with an accuracy and intuitiveness of use no competitor can match. Driven by this desideratum, Millenet's PFM, as the upcoming Benchmarking analysis will show, is the best tool available in Poland to consult one's financial record on real-time and the best tool for personal budgeting and saving plans. The service formulates these plans by processing information on expenses and savings of the user and using this data to forecast future behavior. It targets every person or corporation with a bank account. By providing such a service to the customer, Millenet aims at providing not only a detailed overview of the account's balance and previous outgoing and ingoing money-flows in an organized way; it also informs the client about what money should he spend at which times according to his budgeting and savings' objectives. Overall, Millennium's PFM helps users make more economically rational decisions when buying and saving.

INTERNAL ANALYSIS

Resources and Capabilities: Millennium Bank has a department of Electronic Banking headed by Mr. Ricardo Campos which has over 70 people. The department is concentrated on

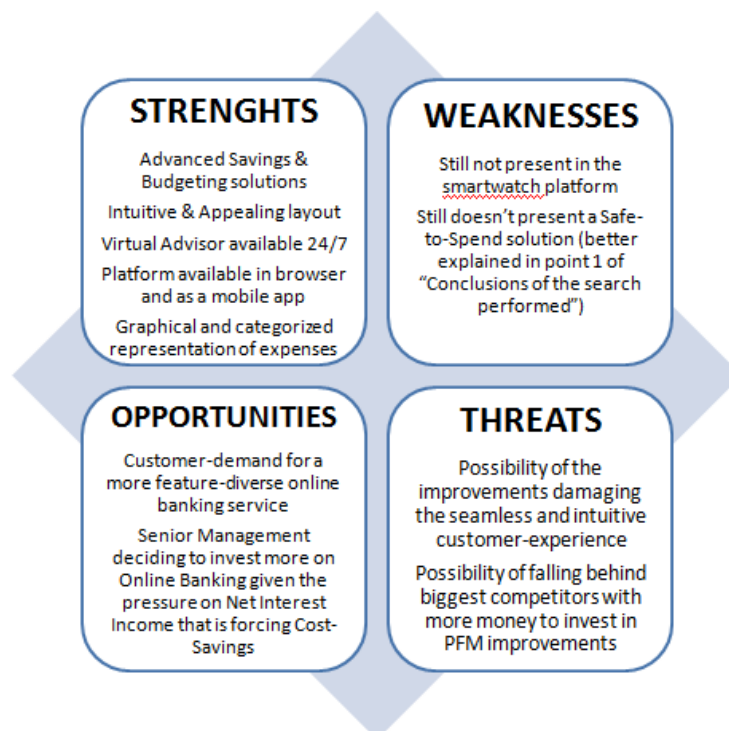
Millennium's headquarters in Warsaw. This team is entirely responsible for the development of features for Millennium's homebanking and mobile-banking platforms.

EXTERNAL ANALYSIS

Market competitiveness

To study the market competitiveness in what regards the Personal Finance Manager it is paramount that we compare the features of each and every domestic competitor of Millennium Bank to Millenet's PFM. This way, one can draw conclusions on the positioning of each bank in what comes to their online platforms and how well prepared are these banks for the upcoming inflow of "digital clients". The analysis will be done considering the 5 biggest banks in Poland in terms of asset volume (see Annex 1).

The most widely accepted framework to carry out a company's Internal and External Analysis is SWOT, precisely the one presented below:



BENCHMARKING

The Benchmarking analysis concerning the features of PFM was done against the 5 biggest banks in Poland asset-volume-wise: PKO, PEKAO, BZ WBK, mBank and ING. The purpose of this exercise of comparison was to understand how Millennium positions itself in the

competitive landscape and most importantly identify what are the processes that can and should be improved to match the highest-performing banking institutions in PFM. The results are presented in the table below:

	Millenet	iPKO	Pekao	mBank	ING	WBK
Summary of the accounts	✓	✓	✓	✓	✓	✓
Automatic categorization of expenses, revenues (transactions)	✓	?/✗	✗	✓	✓	✗
Show the Balance value	✓	✓	✓	✓	✓	✓
Calendarization of upcoming transactions	✓	✗	✗	?	✓	?
Savings Plan (based on past behavior)	✓	✗	✗	?	✓	✗
Savings Plan (based on established Goals)	✓	✗	✗	?	✓	✗
Transactions' history	✓	✓	✓	✓	✓	✓
Budgeting options	✓	✗	✗	✓	✗	✗
Spending/Income/Cash-flows by categories (graphical rep.)	✓	✗	✗	✓	✓	✗
Spending/Income/Cash-flows by categories (list)	✓	?/✗	✗	✓	✓	✗
Select in which accounts/products to consult transactions	✓	✗	✗	✓	✓	✗

Domestic Competition

Indeed, the table above displays how Millennium's PFM performs in relation with the aforementioned 5 biggest banks in Poland. At first sight, we can immediately see that Millennium is the only bank in this study which enables all features considered. ING stands as the closest competitor of this bunch by offering 10 out of the 11 features chosen to study about. In 3rd place comes mBank, which has all features but three²³ these few couldn't be found to be determinately correct. Thus, for study purposes, it's assumed the bank doesn't have them available). The other 3 are then fairly at the same level in terms of offer.

This simple comparison mirrors Millennium's positioning in the Polish banking market: a standout in terms of technological services. One can fondly wonder why such an innovative service represents only the 6th biggest bank in Poland, and the fact of the matter is that what attract new customers, in the words of Ms. Halina Karpinska, is much more the attractiveness and quality of the actual banking products than the usability and diversity of the Online

²³ The features couldn't be found after a careful analysis of mBank's platform (based in a previous study carried out by Millennium Bank's Department of Electronic Banking in September 2014). Therefore, it is assumed that these the bank doesn't have these features available.

platform, much less the Personal Finance Manager itself. Instead, an advanced PFM plays a much more significant role in retaining customers, familiarized as they are with Millenet and its superior features.

STRATEGIC INTENT BASED PLANNING

Environmental Analysis

The environmental analysis identifies the external forces and contingencies which can influence a firm's performance in the future and studies their effects on this actual firm. The objective of this investigation is to build a strategy to mitigate those impacts when they're negative and take advantage of them if they're positive.²⁴ This analysis, if well applied, is a pivotal source of competitive advantage in the sense that, generally speaking, only a few companies have the ability to adjust to the drivers of change, and those will be the ones most likely to succeed in the market. This is especially true in services inserted in the "Internet economy", where the *status quo* is constantly being defied by constant change and, often times, turmoil. Indeed, competition in the market the Millenet service competes is close to the Schumpeterian notion of competition, defined by a "perennial gale of creative destruction", where market-leaders are often overthrown by innovation from more agile and smaller companies.

This uncertainty means firms should develop plausible future scenarios considering the key variables of change in order to better cope with upcoming adversities. The bigger the scope of scenarios the analysis comprehends, the better chance the company has of being prepared for the future. The scenario-creation approach is the one chosen to project the future for the reason that it is not an exact forecast (which is usually wrong precisely due to the narrow scope of its prediction), it rather is a list of possibilities, all of which the firm has to be prepared for to face the future. On the other hand, the analysis' scope shouldn't be too broad that it includes extremely unlikely situations. In fact, the goal here is to prepare the company to uncertain but still plausible future contingencies

²⁴ Renee O'Farrell. (Unknown year of publication). Environmental Business Analysis. Available: <http://smallbusiness.chron.com/environmental-business-analysis-43238.html>. Last accessed 1st April 2015.

Since this thesis focuses on an internet service - inhered in an ever-changing and unpredictable sector - this analysis has extra-importance to develop the strategy of Millennium concerning the Personal Finance Manager tool.

Focal Question

This type of analysis typically starts with identifying a Focal Question, a precise question but also one with a wide scope, which is answered by the strategy itself. Since this thesis looks to develop a Personal Finance Manager that is not only up-to-date but is on the forefront of innovation and usability, the question is: “Which trends of innovation should the electronic banking industry focus in the next 5 years?” The answer to this question will direct the operations of Millennium concerning the improvement of its PFM for the time-frame considered.

MacroTrends Identification

Given that we have the Focal Question, we should now proceed to identify which Macro-Trends are relevant to the matter at hands.

Economical Macro-Trends

- **Size of the Polish GDP and GDP/capita will grow significantly²⁵**
- EU funding dropping after 2020 while FDI already dropping²⁶

Demographical Macro-Trends

- Labor supply will soon be shrinking instead of expanding²⁷
- The birthrate will drop and life expectancy will increase

²⁵ Poland 2025: Europe’s new growth engine (McKinsey Report from January 2015). This report predicts that the Polish GDP will grow from 517 Billion USD to 700 Billion USD (business-as-usual scenario, growth of 35,4%) or 850 Billion USD (aspirational scenario, growth of 64,6%). As for the GDP/capita, today it is at 23,000 USD and it will grow to either 32,000 USD (business-as-usual scenario, growth of 39,1%, reaching the levels of Cyprus or Portugal) or 40,000 USD (aspirational scenario, growth of 73,9%, reaching the levels of Spain or Italy).

²⁶ This data has great importance, since 20% of all investment in Poland in the last decade came from these two sources combined. The drop in FDI occurred in the aftermath of the 2008 subprime crisis.

²⁷ Especially important since demographic expansion (including the 1980s baby boom) was a big contributor for the growth of Polish economy over the last 25 years.

- Prime working-age population (from 15 y.o. to 59 y.o.) will dwindle by 2,7 Million by 2025
- Old-age dependency ratio (Population over 59 y.o. / Working-age population)

Industry Macro-Trends

- The services industry (including not only banking but other business services like outsourcing, offshoring, law and business consultancy) is growing at a fast pace (6% compound annual average growth).²⁸
- **Core revenues shrinking. Many financial institutions (namely banks) around the world have seen their revenues shrink in the last few years due to falling interest rates which motivates cost reduction to help keep profits at least stable. One should note that, with falling interest rates, the pressure on revenues will make the affected banks increase the volume of products they sell (loans conceded) and/or urge those to cut on core expenses.**

Companies Macro-Trends

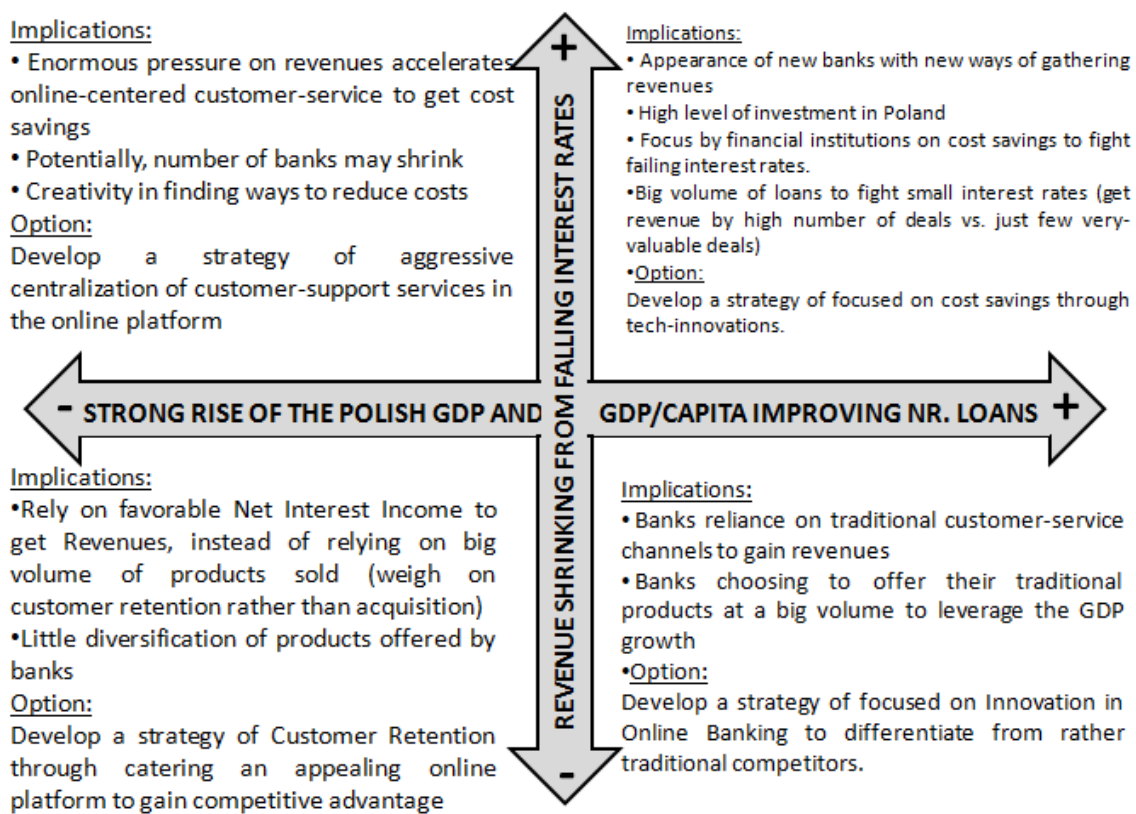
- An increasing number of banks will make mobile payments available
- Enhancement of the Customer experience in dealing with the online banking platforms; this means more intuitive menus and options of actions and also a bigger commitment to visuals (as Simple.com and Moven do)
- Expand the online homebanking business to the newly-commercialized/upcoming Wearable devices (e.g.: smartwatches, Google Glass).
- Shift the current paradigm of “self-service” (having the customers doing the hated tasks themselves) to selfless service (having the customers deciding how they want to interact).²⁹

Scenarios

²⁸ This reported growth is strongly anchored by the rise of the outsourcing/offshoring sector in Poland, growing at a rate 3 times as big as in India.

²⁹ Derived from a blog post excerpt of Michael Nuciforo, a former Head of Mobile Banking of the Royal Bank of Scotland.

The scenarios are created under the blueprint of 2 chosen Macro-Trends. These 2 will be the ones which not only display maximum impact in the firm but also are quite uncertain in direction and speed of evolution. Needless to say, the chosen uncertainties should be independent from each other, so that the scenarios created have a scope as wide as possible. These will be the critical uncertainties the firm has to tackle with the most caution. The chosen ones are afore-highlighted: the significant rise in the GDP and GDP/capita in Poland in the next few years and the shrinking of Revenues derived from falling interest rates.



All scenarios point in the direction of Millennium pursuing the development of their Online Platform (Millenet), either to achieve cost-savings at a time when Revenues are shrinking or to differentiate from competitors much-dependant on the traditional channels of customer-service or just for the reason of retention of customers through an improved customer-service. Thus, the positioning of Millennium to handle future contingencies should always have has a central matrix the improvement of the Personal Finance Manager tool. After reaching this conclusion and after several conversations with Ms. Halina Karpinska, Millennium's Head of the Website

Management Board³⁰, this thesis' author was advised to look into other banks known for their innovative approach to online banking, namely the biggest Turkish banks (like GARANTI BANK), the Neo Zealander banks KIWIBANK and WESTPAC NZ BANK, the Australian Commonwealth Bank, the North-American startups Simple.com and Moven and also the Polish bank Meritum Bank. This benchmark covers both the laptop versions of the services (through an internet browser) and the mobile versions of the same (through an app).

CONCLUSIONS OF THE RESEARCH PERFORMED³¹

Considering the benchmarking analysis done and the best practices searched for, some conclusions were reached. These conclusions took 2 ways: which direction of improvement the Personal Finance Manager should prosecute and which steps should Millennium's team take to implement the PFM in accordance with its objectives.

The summary of those conclusions is as follows:

Qualitative Review: All in all, it's easy to note that Millenet stands out in the Polish domestic market as the best online platform in the market, outweighing the big 5's in quality. Millenet is also well positioned in comparison with other foreign PFM providers but lacks a few features that will prepare the platform to be amongst the best in the near future.

These are:

- **1. Adapt Simple's Safe-to-Spend notion to Millenet**, with a new table in the PFM's Main Dashboard displaying this different kind of balance. The feature shouldn't be exactly like Simple's (because of the problem explained on slide 21) but rather a "What can I spend today?" tool.

EXAMPLE: A client has 10 000 PLN in his account, a saving goal worth 300 PLN in 30 days and an upcoming expense worth 500 PLN in 10 days. What would be the "What can I spend today?" value?

SOLUTION: $\frac{10\,000 - (300 + 500)}{30\,days} = 306, (7) PLN$

³⁰ Loose translation of the following Polish title of the position: Kierownik Zespołu Zarządzania Stroną Internetową Banku

³¹ These are the conclusions of a research detailed in Annex 7

The trick here is to pick wisely the time frame for the calculation. One should go for the number of days until the last expense/saving goal is payed/accomplished. Here, is 30. Then, we take the Current Balance and subtract all the expenses the time frame encompasses. Finally, we divide the aforecited subtraction for the number of days and get the Average amount of expenditure p/ day so that the upcoming spendings/goals aren't jeopardized.

- In alternative to this, there could be a Money Vault like GoBank has, wherein the user can storage his money at any given time.
- **2. Provide alerts for Spendings, Balance (in real-time), if a Bill Payment is due and if a certain category of expenditure in the current month exceeds the average monthly amount spent on that same category (this last feature is notably used by Moven and Mint.com).** While the first 3 suggested alerts are rather simple, the last one implies some qualitative feedback (e.g.: the alert sentence describes how much higher the current expenditures are in relation with the typical, per month, using the words HIGH or VERY HIGH to label those actual spendings). The aforementioned cases would be the default cases for the occurrence of alerts. In addition to this, In addition, the PFM must **let the user edit which movements he wants to be notified of**, according to his personal preference and the bank's criteria, much like KiwiBank does.
- **3. Timeline representation of what Saving Goals are left to achieve** and display of those which were achieved already (as SIMPLE.com)
- **4. Adapt iGaranti's iWallet solution** for online payments and those in physical stores (using the QR codes).
- **5. Adapt iGaranti's SmartShopping solution** also in conjunction with the social network FourSquare.
- **6. Have less categories for expenses** → SIMPLE.com has just 9, whilst Millenet has 16, which then are sub-categorized into 96 (!)
- **7. Base the SmartWatch approach on Instant feedback on Income & Expenses and on the Real-Time current balance** display everytime there's a movement in the account.

- **8.** Have a **Sweep feature** (based on Kiwibank's) to **swap money from one account to another** (of the same user) in case the limits (of minimum and maximum money to have in each account) are crossed.
- **9.** Adapt **ING's Smart Saver** to Millenet: have a tab which enables the user to allocate a certain selected percentage of a transfer to a savings account.
- **10.** There could be a bar **comparing Income and Expenses in percentage**, like PocketSmith has. This way, the user would have a clearer vision of how bigger one category is in comparison with the other.
- **11.** Have a feature like **Kiwibank's PayStream**, which takes some part of the user's income automatically to a Saving spot before he even sees it. The user, with this feature, could determine which percentage or amount of income would be destined to this Savings spot.
- **12.** Have a bill-payment feature which lists upcoming bill payments according to how soon they are due. The feature would illustrate the bills as red, yellow or green weather they are, respectively, due in 7 days, 2 weeks or more than 2 weeks. The bills would be represented in a circular colored bar as displayed in ANNEX X+4. This idea is inspired in the already-available feature provided by the app Mint Bills.
- **13.** Expand the scope and detail of reports the PFM offers the user. Currently, Millennium caters graphical Reports on Spendings, Income and Cash-Flows (direct visual comparison between inflows and outflows) displayed either by category or period (see Annex X+5 for screenshots). On the Cash-Flows tab, there could be added a line of text mentioning the difference in Net Worth from one year (or a month or a week) ago until the current time.³² Another addition could be a report only concerning Investments made by the user through his Millennium accounts.

FINANCIAL ANALYSIS OF THE SUGGESTIONS PRESENTED

For the suggestions here-presented to be worth the Investment, they have to deliver results which justify it. In fact, the benefits attained from it have to outweigh the costs of improving

³² An example of a suitable sentence would have been: Your net worth has decreased from 94,746.24 PLN (on Jan 1, 2014) to - 51,447.28 PLN over 12 months (decrease of 154,3%). This example is inspired in iBank 5's Net Worth report.

the PFM tool. This section of this Work Project explains the steps taken to reach Return on Investment (ROI) of this thesis' conclusions.

Traditionally, companies' IT departments constitute Cost Centers, rather than Profit Centers³³, meaning improvement on operations from these divisions may generate Cost Savings plus increased Productivity, but not likely will result in Revenue generation. Since it is believed that banks' profits will be mostly driven by Cost-Savings (as low interest rates shrink revenues), IT is gaining more preeminence in the core business of banking. To financially translate the impact of the IT-based solutions here-presented, the ROI was chosen as the appropriate measure.

ROI is a measure which combines the former two benefits and appropriately translates the financial reasoning behind the decision of going forward with the improvement on Millennium's Personal Finance Manager tool.

Before addressing the Millennium's PFM issue specifically, one should clarify the concepts of **Cost Savings** and **Increased Productivity** in the context of software advancement³⁴. The latter occurs when the amount of time taken to carry out an activity is reduced. The paramount driver of this uplift is applying best practices to a Process or Processes so that the staff member in charge of these takes, indeed, less time completing the tasks to him assigned. This will free time for the employee to do additional work, which by itself will keep the company from contracting another person to perform this additional task. This chain of events will save money for the company in paid wages.

Narrowing the ambit of this analysis to the final suggestions concerning PFM, the improvement of this service delivery to end-users will have direct impact, according to the outline mentioned on the previous paragraph, on the following:

³³ Colin O'Neill. (2009). Calculating ROI for Process Improvement. Available: <http://www.ibm.com/developerworks/rational/library/edge/09/mar09/oneill/>. Last accessed 8th May 2015.

³⁴ The suggested improvements in the Personal Finance Manager tool are a type of software advancement, thus the financial benefits of the latter can be theoretically applied to the former.

- Less number of complaints received by phone call, email or on-the-branch. This means less employees will be needed in each and every one of these client-corporation communication channels.
- Less people accessing the afore-cited channels of communication (namely the branch) to ask for advice from a consultant on how to save money better.³⁵

In order to actually compute the value of cost savings produced by the introduction of the suggestions here-presented, one has to make assumptions concerning the number of Millennium employees dealing with customers' complaints and the employees on branches who can possibly present customers with Savings solutions (e.g.: opening a new Savings account).³⁶

Moving to the assumptions, Bank Millennium S.A. employs 5,770 people³⁷ who cost the bank 547 Million PLN. Out of these, 3,909 people work in the branches or in direct sales. For the purposes of this thesis, one assumes all these attend end-customer services. Now having the exact number of employees in charge of providing clients with support, we should estimate the time those spend dealing with complaints and clients asking for advice on branch or by phone on what to do to save better and/or spend more rationally. This thesis' author assumes that, on average, all in-branch and direct sales employees spend 10% of their time dealing with both activities describes just-above.

After successfully implementing the 13 suggested incremental solutions to improve the bank's PFM platform, the change in this actual tool could be considered radical in comparison with its state today. Regarding this factor, the assumption is that the afore-cited employees will instead spend 8% of their time attending complaints and advising on Savings solutions (instead of 10%).

³⁵ With the new PFM saving features, less customers would go to the branches asking for solutions to save their money better because they'd have online-based smart solutions on how to optimize their money allocation considering their Saving Goals, introduced in the system.

³⁶ The author of this thesis considers opening a new Savings account as a direct substitute of having a more intuitive PFM which enables the user to more efficiently fulfill his Saving goals. This way, if in fact the latter hypothesis materializes, the former will be less necessary, leaving employees with less work in the dominium of opening new bank accounts.

³⁷ Data taken from the 2014 Consolidated Annual Report of Millennium Bank, available in the following link: <http://www.bankmillennium.pl/en/about-the-bank/investor-relations/financial-reports/annual-reports>

As already suggested, the benefits from the PFM improvement will result in cost savings. As employees will spend less time in some customer service activities, less staff people will be necessary to cater the same level of service, will mean cost savings would be achieved by layoffs.³⁸

To formulate these cost savings one can start by calculating how much Millennium spends today in wages for those 3,909 employees allocated to “branches or direct sales”. This fraction of workers represent approximately 67,7% of the total work-force supported by Millennium, meaning only 32,35% work in the head offices.³⁹ Assuming that, on average, a “branch or direct sales” employee whose function is customer service earns 4,000PLN⁴⁰ the total annual cost of Wages for Millennium with such employees will be:

$$4000 \text{ PLN} \times 12 \text{ months} \times 3909 \text{ employees} = 187\,623\,000 \text{ PLN}^{41}$$

We add this new information to the already-stated assumption of, if the PFM solutions are implemented, each employee will spend less 2% attending complaints and advising on Savings solutions. This implies Millennium will achieve the same level of customer support with 2% less employees, which means that layoffs in such proportion should be prosecuted. In numerical terms, 2% of 3,909 employees is precisely 78,18⁴². At this stage, the number of layoffs has been identified. The cost savings achieved by this operation *per se* are the following:

$$4000 \text{ PLN} \times 12 \text{ months} \times 78 \text{ employees} = 3\,744\,000 \text{ PLN}$$

Recalling that the goal of this reasoning is figuring the total cost-savings from this operation, for this to be achieved, one has to still discover 2 pieces of information: the cost of layoff

³⁸ Layoff means suspension or termination of an employee’s or employees’ job contract for business-related reasons.

³⁹ The 2014 Consolidated Annual Report of Millennium Bank identifies these two categories of employees.

⁴⁰ This value is within the range of salaries available on Glassdoor.com for Customer Service in a variety of companies operating in Poland. The search includes all cities in Poland, as Millennium’s 423 outlets are well-spread throughout the country (e.g.: Customer Specialist in Bank Pekao earns 3,987PLN/month, a Customer Service specialist in HCL Technologies earns 4,000PLN/month, a Customer Service agent at Xerox earns 4500 PLN/month and a Corporate Customer Service specialist in BZ WBK earns 3,000PLN/month).

⁴¹ This value represents 34,302% of the total personnel costs incurred by Bank Millennium Group (including Bank Millennium S.A. and subsidiaries). Computation: 187,623,000/547,000,000=34,302%

⁴² $0.02 \times 3909 = 78,18$. We assume this value would be translated in the layoff of 78 employees.

(compensations are typical in these cases) and the cost of the actual implementation of the improvements.

Concerning the cost of firing employees, the author of this thesis will assume the average cost of layoff in Poland as studied by the World Bank in Jan 2009⁴³. According to this source, the firing cost per person is equivalent to 13 weeks of the person's wage. Since it was assumed the monthly wage for the specific type of employee in question is 4,000 PLN and one month corresponds to 4,3(3) weeks (13/3), the cost of layoff per employee will be:

$$\begin{array}{rcl} 4\,000\text{ PLN} & \text{—————} & 4,3(3)\text{ weeks} \\ X & \text{—————} & 13\text{ weeks} \\ \\ & & \mathbf{X = 12\,000\text{ PLN}} \end{array}$$

To achieve the total cost of layoff, one has to multiply this last-achieved value by the actual number of employees dismissed. That being, the entirety of the layoff will cost Millennium:

$$12\,000\text{ PLN} \times 78 = 936\,000\text{ PLN}$$

The other issue still missing to complete the reasoning is the cost of implementing these solutions. From this thesis' author's experience as Intern in Millennium Bank, the team to carry out these changes would be constituted by:

- The actual intern who carried out the market research⁴⁴, with a monthly salary of 1000 PLN. The research lasted 3 months. Thus, the total cost of the research for the improvement is 3000 PLN.
- The team of webpage designers, which are assumed to spend 6 months⁴⁵ on the development of the new features and their implementation on the current layout of the

⁴³ Unknown author. (2009). Firing cost (weeks of wages) in Poland. Available: <http://www.tradingeconomics.com/poland/firing-cost-weeks-of-wages-wb-data.html>. Last accessed 22nd April 2015.

⁴⁴ Referent to the actual author of this thesis

⁴⁵ This thesis' author believe the time for this team to carry out their activities will be 6 months (a fairly short period of time) because of the fast-pace work in the department and the direct words of the CEO, who reckoned electronic banking is "where everything is happening and will happen for the near future"

webpage. This team is composed by 20 members, each assumed to earn 6000 PLN/month⁴⁶. This will mean the total cost of developing and implementing the changes proposed is:

$$6000 \text{ PLN} \times 20 \text{ members} \times 6 \text{ months} = 720\,000 \text{ PLN}$$

- The team which handles the Control of the features developed. This team will test the actual developments from a user perspective and give notice of possible bugs or inconsistencies to the development team. This process can take up to 1 month, if there are no inconsistencies of major significance. Assuming a team of 5 people who earn 5000 PLN/month⁴⁷ would be necessary to complete this task, the overall cost of this operation would be:

$$5000 \text{ PLN} \times 5 \text{ members} = 25\,000 \text{ PLN}$$

All in all, the cost of these solutions will be the sum of the layoff costs with the research/development/implementation/testing costs. Thus, they are:

$$936\,000 + 3\,000 + 720\,000 + 25\,000 = 1\,684\,000 \text{ PLN}$$

Assuming the benefits of the PFM improvements will stand for 2 years⁴⁸ the Return on Investment of the project will be:

$$\begin{aligned} ROI &= \frac{(\text{Investment gains} - \text{Investment cost})}{\text{Investment cost}} \\ &= \frac{(7\,488\,000 \text{ PLN} - 1\,684\,000 \text{ PLN})}{1\,684\,000 \text{ PLN}} = 3,4465 \end{aligned}$$

The value achieved means that the profit the investment brings Millennium more than triples the capital invested, which corroborates the validity and worth of the project.

⁴⁶ The average web designer salary in Poland is 4 333 PLN according to the website Salaryexplorer.com (consulted on May 20th 2015). Being that Millennium is a large corporation (and it is proven that big companies pay more than rather small/medium ones) the author rounded the salary assumption to 6 000 PLN.

⁴⁷ I assumed a controller at Millennium would earn 5 000 PLN by deducting 1000 PLN to the Web designer's salary. Although the webpage controller has a paramount role in making sure the features are well implemented, he's not the core specialist in the process. This is why it is assumed he has a smaller salary than the actual developer.

⁴⁸ Benefits of 2 years meaning the diminished number of hours employees will spend dealing with complaints and advisory on how to save money better, during two years from the date of the PFM improvement project completion. This can be measured through the formula $3\,744\,000 \times 2 = 7\,488\,000 \text{ PLN}$.

ESSAY CONCLUSION

This very essay concludes, from both theoretical and financial standpoints, that Millennium can adopt brand-new ideas on the forefront of PFM innovation to enhance its digital platform and obtain financial benefits out of it. If well-implemented, the suggestions here-presented can serve as example for other banks on how to achieve not only an improved level of customer satisfaction with the propitiated online services, but also a tangible benefit due to a better cost efficiency in dealing with clients. At a time when banks' revenues worldwide are being pressured by falling Net Interest Incomes⁴⁹, it is clear that the fundamental driver of larger Profits in the future will foremost be cost-savings. Such can be achieved through evermore concentrating client services in online-based platforms, reducing banks' dependency on physical outlets and/or personal customer contact. This very paper demonstrated a step-by-step approach to carry that out.

⁴⁹ The Net Interest Income is the core revenue driver of most banks and is constituted by the difference between Interest Received in banks' loans conceded and Interest Paid in the loans the banks incur in. This value (hence, bank's revenues) can increase either by the volume of loans or more favorable interest rates. Since today's interest rates, generally, are at (or close to) historical lows, revenues are hurt.

ANNEX 1: TOTAL ASSET VALUE (and ASSET GROWTH) OF POLAND'S BIGGEST BANKS

TOTAL ASSETS' VALUES OF THE BIGGEST BANKS IN POLAND

BANK	2010	2011	2012	2013	2014E	2015E	2016E
PKO BP	169,661	190,442	193,151	199,231	249,169	266,705	283,06
PEKAO	134,09	146,406	150,755	158,522	165,414	174,392	184,478
BZ WBK	53,154	59,797	60,019	106,089	129,115	138,441	149,179
mBank	90,039	98,79	102,145	104,283	110,26	113,509	116,974
ING BSK	64,518	69,723	78,267	86,752	96,551	104,814	111,01
Bank Millennium	46,984	50,838	52,742	57,017	60,529	64,108	67,806
Bank Handlowy	37,518	42,278	43,509	45,398	48,822	50,968	53,597

(Values in Millions of PLN)

ASSETS' GROWTH OF THE BIGGEST BANKS IN POLAND

BANK	2010	2011	2012	2013	2014E	2015E	2016E
PKO BP	8.4%	12.2%	1.4%	3.1%	25.1%	7.0%	6.1%
PEKAO	2.7%	9.2%	3.0%	5.2%	4.3%	5.4%	5.8%
BZ WBK	18.3%	12.5%	0.4%	76.8%	21.7%	7.2%	7.8%
mBank	11.1%	9.7%	3.4%	2.1%	5.7%	2.9%	3.1%
ING BSK	7.7%	8.1%	12.3%	10.8%	11.3%	8.6%	5.9%
Bank Millennium	4.6%	8.2%	3.7%	8.1%	6.2%	5.9%	5.8%
Bank Handlowy	(0.3%)	12.7%	2.9%	4.3%	7.5%	4.4%	5.2%

ANNEX 2: HOME PAGE TAB OF MILLENET

The screenshot shows the Bank Millennium website interface. At the top, there's a navigation bar with the Bank Millennium logo and links for 'Polski', 'What's new', 'Exchange rates', 'Help', and 'Contact'. Below this, a user profile section shows the name 'ONOFRE LAZARO GONCALVES GONCALO' and links for 'My settings', 'Messages (6)', and 'My applications and agreements'. A session timer indicates 'Session ends in: 08:53' with a 'Logout' button.

The main navigation menu includes 'Home page', 'My finances', 'Accounts', 'Transfers', 'Cards', 'Savings', 'Loans', 'Investment and Insurances', and 'Mobile banking'. The 'My finances' tab is active, showing a 'Finance management' section with links to 'Summary' and 'Finance Manager'. Below this, there's a 'Download documents' section with links to 'Operations history', 'Statements list', and 'Products and services'.

The central part of the page features a 'Reference Bank Millennium "news"' section with a graphic of a newspaper and a gold coin. It includes a brief description of the newsletter and a 'Download newsletter!' link. To the right, there's a table showing account balances and transaction history. The table has columns for 'Available funds' and 'Blocked funds'. The 'Available funds' column shows '503.04 PLN' and '-53.00 PLN'. The 'Blocked funds' column shows '549.78 PLN' and '53.00 PLN'. Below the table, there are links for 'Transaction history', 'New domestic transfer', and 'New term deposit'.

At the bottom, there's a footer with a timestamp '2015-05-09, 4:51 AM' and a 'New subscription of Investment Deposit' link. A disclaimer states: '* calculated for informational purposes according to the average exchange rates of Bank Millennium S.A. In order to calculate the current balance, use appropriate exchange rates available at the top of page.' A 'New current account' button is also present.

ANNEX 3: MAIN DASHBOARD SCREENSHOTS

[Home page](#)
[My finances](#)
[Accounts](#)
[Transfers](#)
[Cards](#)
[Savings](#)
[Loans](#)
[Investment and Insurances](#)
[Mobile banking](#)

My shortcuts

Create your own shortcuts to the operations you perform most often.

[Shortcuts - settings](#)

Contact with Advisor

- Credit Card
- Mortgage Loan
- Urgent Loan

Finance Manager - Personal Finance Management tool

- Finance Manager allows you to automatically categorise account and card transactions, based on commercial codes, assigned to merchants, descriptions of transactions, names and accounts of the transactions.
- However we draw attention to the fact that structure of expenses may not fully correspond to the actual structure of your expenses, because the commercial codes assigned to merchants sometimes do not correspond to the product range sold.

Please verify the assigned expense/income categories; make the appropriate changes to have a full and true picture of your expense structure. [See more](#)

Main dashboard
Transactions
Budget
Reports
Settings

Your defined period for calculations

2014
2015

30 September - 30 October 2014
31 October - 29 November 2014
30 November - 30 December 2014
31 December - 30 January 2015
31 January - 27 February 2015
28 February - 30 March 2015
31 March - 29 April 2015
30 April - 30 May 2015
31 May - 29 June 2015

Your income and spending in current month - day of start on 31 of the month [current period: from 2015-01-31 to 2015-02-27]

[Adjust month settings](#)

Your total income and spendings in specified period

Income
Spendings
Difference
Sun

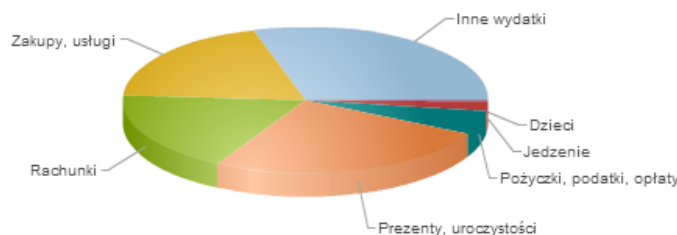
3,000.00 - 2,300.00 = 700.00

Congratulations! You spent less than you earned

Check how it works on [Transactions](#) list tab to see all transactions

[See all transactions](#)

Your spendings by category



Click on a slice or category name to see the data for subcategories. This graph shows your expenditure for the month, broken down into categories. For more information, go to the [Reports](#) where you will find the graphs of spending, income and cash flows at any time.

[See reports](#)

Your calendar with transactions and comments

Account Upcoming transactions from all upcoming payments

Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday
19	20	21	22	23	24	25
Available funds	Available funds	Available funds	Available funds	Available funds	Available funds	Available funds

Transaction added automatically by system
 Cyclical transaction

[See calendar details](#)

ANNEX 4: TRANSACTIONS SCREENSHOTS

Home page

My finances

Accounts

Transfers

Cards

Savings

Loans

Investment and Insurances

Mobile banking

My shortcuts

i

Create your own shortcuts to the operations you perform most often.

Shortcuts - settings

Contact with Advisor

- Credit Card
- Mortgage Loan
- Urgent Loan

i

The list of transactions in Finance Manager presents most of current account and card transactions

- For the sake of showing the full picture of expenses and income the system does not show certain transactions, e.g. early payment of credit cards. To view the actual list of transactions please use the account or card Transactions history in the Accounts or Cards bookmark.
- The system automatically assigns transactions to appropriate categories, however you can change the category of a transaction. You can also add your own subcategories and categorisation rules in the Settings bookmark. The "human" icon beside the transaction means that your own transactions assignment rule has been registered with the transaction.

The history of transactions is shown up to 12 months back. FX transactions are shown converted to zloty at the average NBP rate from the transaction day.

Main dashboard

Transactions

Budget

Reports

Settings

Show filters

Transaction history from 2015-01-31 till 2015-02-27

Date	Description	Category	Subcategory	Amount
2012-03-28	DEBIT POSTED Zasilenie lokaty 111518486	Savings, insurance	Term deposits, saving z	-612.00
2012-03-28	CREDIT RECEIVED ZERWANIE LOK. 111517475	Return from investment	Term deposits, saving z	500.00
2012-03-28	DEBIT POSTED Zasilenie lokaty 111518453	Savings, insurance	Term deposits, saving z	-500.00
2012-03-28	TRANSFER ORDER test zmiany opisu To: Telekomunikacja Prosta Warszawa	Bills	TV, home phone, Intern	-1.00
2012-03-28	TRANSFER ORDER test zmiany opisu	Return from investment	Term deposits, saving z	0.04
2012-03-27	TRANSFER ORDER test zmiany opisu To: Telekomunikacja Prosta Warszawa	Bills	TV, home phone, Intern	-1.00
2012-03-27	TRANSFER ORDER test zmiany opisu	Return from investment	Term deposits, saving z	0.04
2012-03-26	TRANSFER OUT test zmiany opisu To: Basia	Shopping, services	Clothing, shoes, access	-109.00
2012-03-26	TRANSFER ORDER test zmiany opisu	Return from investment	Term deposits, saving z	500.00
2012-03-26	TRANSFER ORDER test zmiany opisu	Return from investment	Term deposits, saving z	0.41

ANNEX 5: BUDGET SCREENSHOTS

[Home page](#)
[My finances](#)
[Accounts](#)
[Transfers](#)
[Cards](#)
[Savings](#)
[Loans](#)
[Investment and Insurances](#)
[Mobile banking](#)

My shortcuts
 Create your own shortcuts to the operations you perform most often.
[Shortcuts - settings](#)

Contact with Advisor

- Cash Loan
- Credit Card
- Mortgage Loan

Budget

Under the 'Budget' bookmark you can define your expenses, specifying the amounts you want to allocate per month to individual spending categories and subcategories. You will be kept posted about the budget balance by the budget utilisation graph. The stripe colour helps you understand your budget situation in the particular category. Green means that you have used-up less than 60% of the budget; orange means more than 60%, while red, that you are over 90%. You can also get texts with your budget balance.

Also check out the new options in "Saving Plan" and "Planner"

[Main dashboard](#)
[Transactions](#)
[Budget](#)
[Reports](#)

[Settings](#)

Your budget
 Savings plan
 Planner

2015
11 January - 10 February 2015
11 February - 10 March 2015
11 March - 10 April 2015
11 April - 10 May 2015
11 May - 10 June 2015
11 June - 10 July 2015
11 July - 10 August 2015
11 August - 10 September 2015
11 September - 10 October 2015

Your income and spending in current month - day of start on 11 of the month [current period: from 2015-05-11 to 2015-06-10]
[Adjust month settings](#)

Add new budget

Your budgets for categories and subcategories in the selected period

☐ Include planned transaction from calendar

Categories and subcategories	Used budget	Budgeted	- Spent	= Remaining
Total		400.00	200.00	200.00
Bills	<div><div></div></div> 50%	400.00	200.00	200.00

Suggested new budgets
 Here you can see all categories and subcategories for which you can add new budget

Categories and subcategories	Average spendings in last 3 months	
Bills		
Mobile phone	20.83	+ CreateBudget
Consumer loans, fees, taxes	2.32	+ CreateBudget
Consumer loans, fees, taxes (other)	2.32	+ CreateBudget
Food, dining	122.87	+ CreateBudget
Fast food	15.00	+ CreateBudget
Groceries	57.43	+ CreateBudget
Restaurants, cafes	50.44	+ CreateBudget
Healthcare	59.50	+ CreateBudget
Eyecare	59.50	+ CreateBudget
Other spendings, ATMs	602.89	+ CreateBudget
ATMs	527.89	+ CreateBudget
Disbursements in branches	75.00	+ CreateBudget
Personal care	20.00	+ CreateBudget
Spa, beauty	20.00	+ CreateBudget
Shopping, services	63.78	+ CreateBudget

Contact

Main dashboard
Transactions
Budget
Reports

Settings

Your budget

Savings plan

Planner

Savings plan will help you keep more money in your pocket

Savings Plan is a tool you can use to plan and control your spendings. It is dedicated to provide you with the best possible way to reduce your spendings

Create savings plan

Analysis of your income and spending

This will give you an overview of your finance and help you define your future spendings. Also, basing on this analysis we will be able to tailor savings plan that will best suit your profile.

Last 6m cycles	Income	Spending	Difference	Remove
2015-04-11 - 2015-05-10	1,001.04	1,522.65	-521.61	<input type="checkbox"/>
2015-03-11 - 2015-04-10	1,001.04	591.05	409.99	<input type="checkbox"/>
2015-02-11 - 2015-03-10	1,001.04	959.19	41.85	<input type="checkbox"/>
2015-01-11 - 2015-02-10	1,001.48	1,003.98	-2.50	<input type="checkbox"/>
2014-12-11 - 2015-01-10	1,001.48	1,364.35	-362.87	<input type="checkbox"/>
2014-11-11 - 2014-12-10	440.29	0.00	440.29	<input type="checkbox"/>
Avg.	907.72	906.85	0.87	

Define savings amount and duration

Start saving from ?

☐ June, 11
☒ Today

What type of amount do you want to set?


☒ monthly savings
☐ total savings, for an event or purchase


Your planned monthly savings

PLN


Contact

[Home page](#)
[My finances](#)
[Accounts](#)
[Transfers](#)
[Cards](#)
[Savings](#)
[Loans](#)
[Investment and Insurances](#)
[Mobile banking](#)




My shortcuts

 Create your own shortcuts to the operations you perform most often.
[Shortcuts - settings](#)

 **Contact with Advisor**

- Credit Card
- Mortgage Loan
- Urgent Loan

 **Planner - Payment Assistant**
 The 'Planner' is your interactive calendar. Thanks to it you will see upcoming transactions in the system, such as: loan payments, credit card repayments, standing orders, accrual of interest on maturing deposits, transfers with future date. You can add notes and your own transactions and assign them to appropriate categories to remember to do them. If you want, transactions saved in The Planner may be reflected in the budget.

[Main dashboard](#)
[Transactions](#)
[Budget](#)
[Reports](#)
[Settings](#)




 [Your budget](#)
 [Savings plan](#)
 [Planner](#)

February 2015
 2014 2015
 ◀ October November December January **February** March April May June ▶

Your calendar with transactions and comments
 Calendar presents all upcoming expenditure and income registered by the system. You can also add your transactions and assign them to categories and subcategories, add description and comment. You can also add notes to Calendar. You can change your transactions and notes later. Click on selected day number or button "Add new transaction" to add new transaction or note.
Transaction planned in Calendar will not be made automatically!

[Add new transaction](#)
[Add new note](#)

Accounts **View**

 **Month**
 **Week**
 **Day**

Available funds on selected account

Available funds	Planned income	Planned spending	Available funds for the end of the month
40,584,220.64 +	1,505.91 -	164,573.94	= 40,421,152.61

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	

ANNEX 6: REPORTS SCREENSHOTS



The Reports bookmark permits viewing total transaction amounts: expenses, income and cash flows

- In the **Spendings** bookmark you will see a chart concerning expenses divided into categories (pie chart) or over time (bar chart). Clicking on a field in the pie chart, representing a specific category, or clicking on its name will show you only this category divided into sub-categories.
- In the **Income** bookmark you will see similar information and charts concerning your income.
- The **Cash flow** bookmark shows a chart of cash flows over time.

Main dashboard

Transactions

Budget

Reports

Settings



Spendings



Income



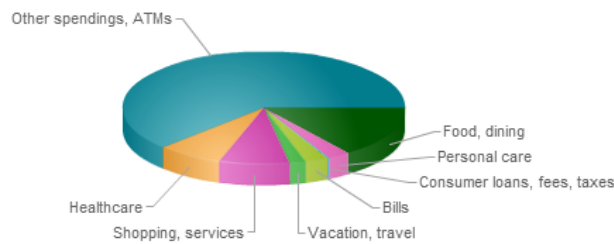
Cash flow

Show Filters

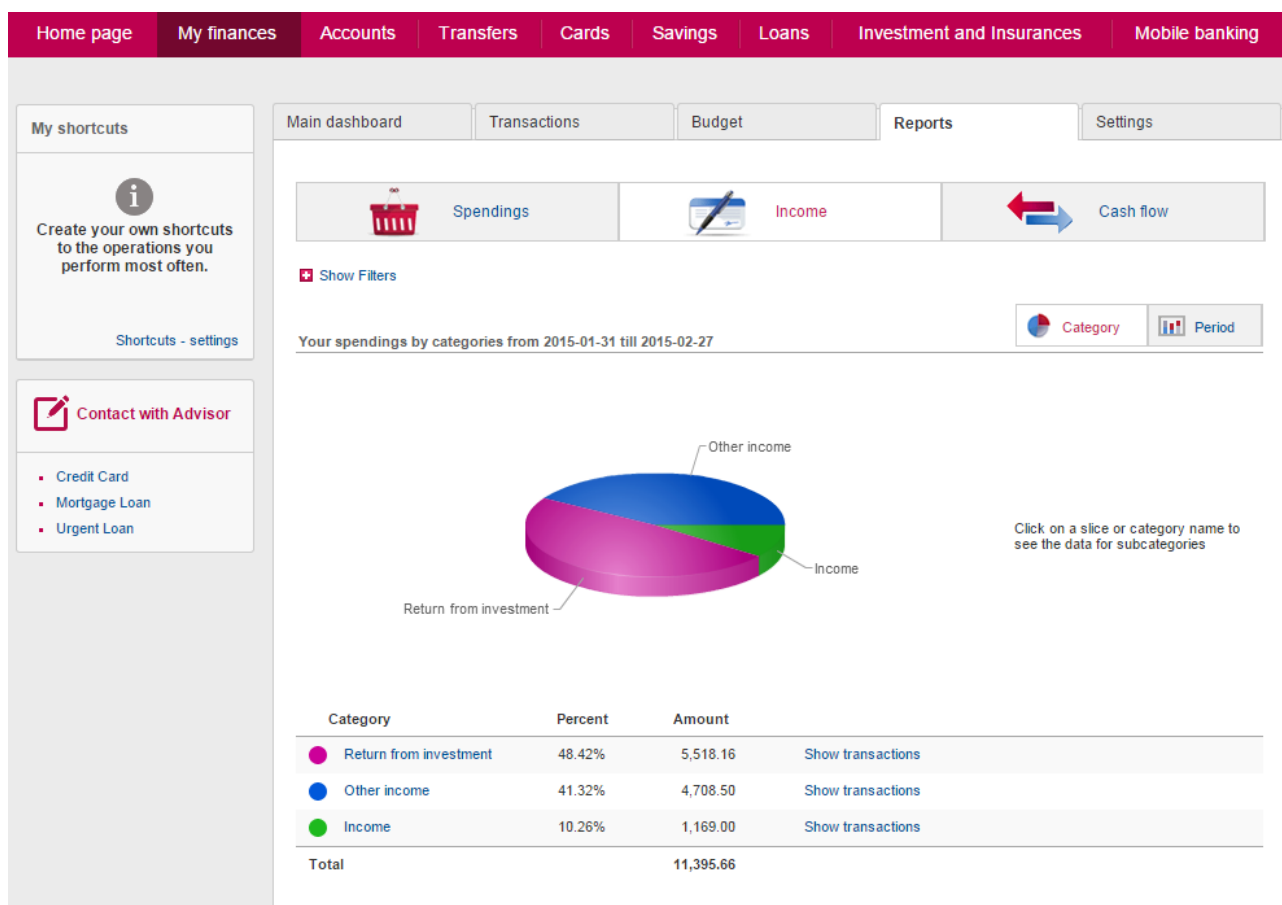
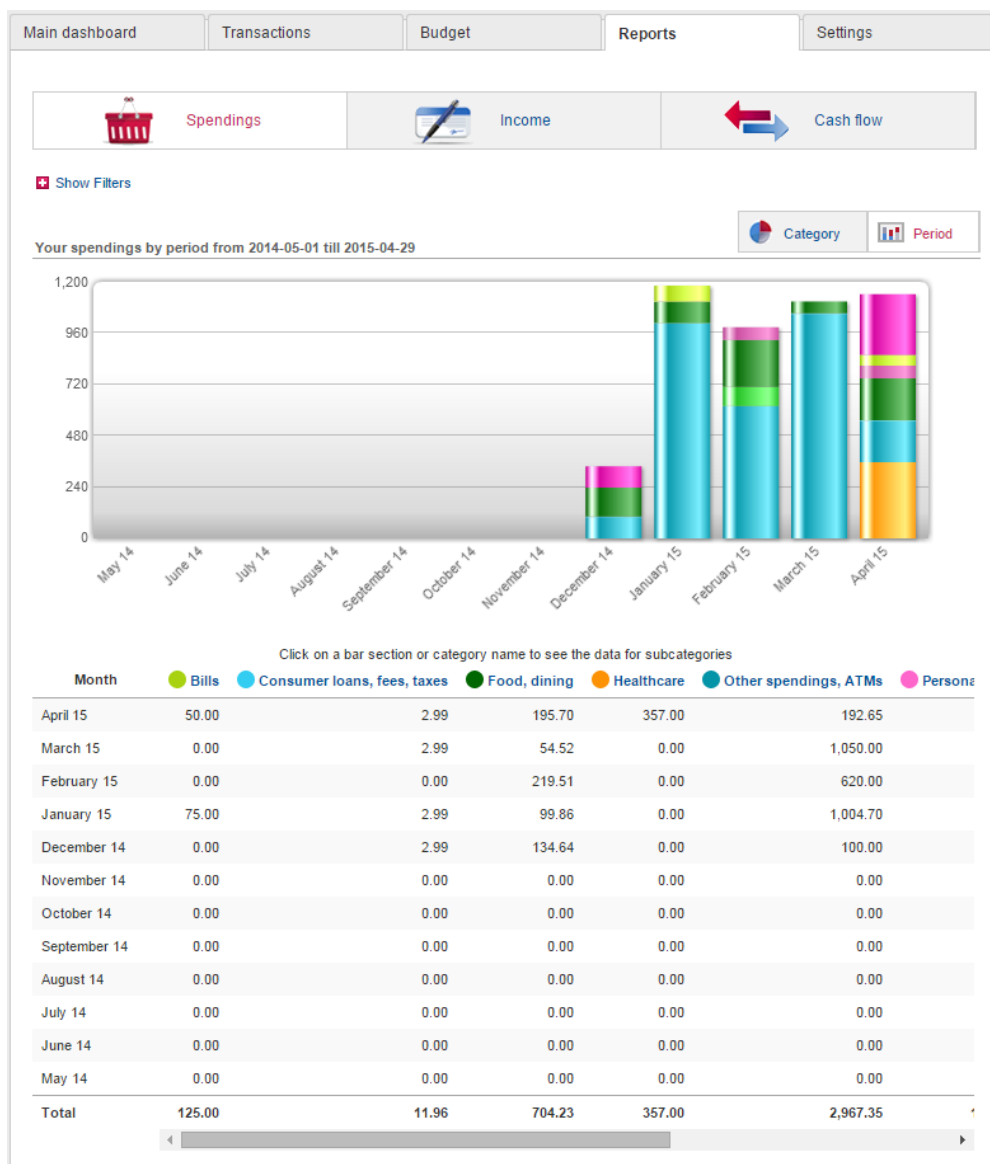
Your spendings by categories from 2014-05-01 till 2015-04-29

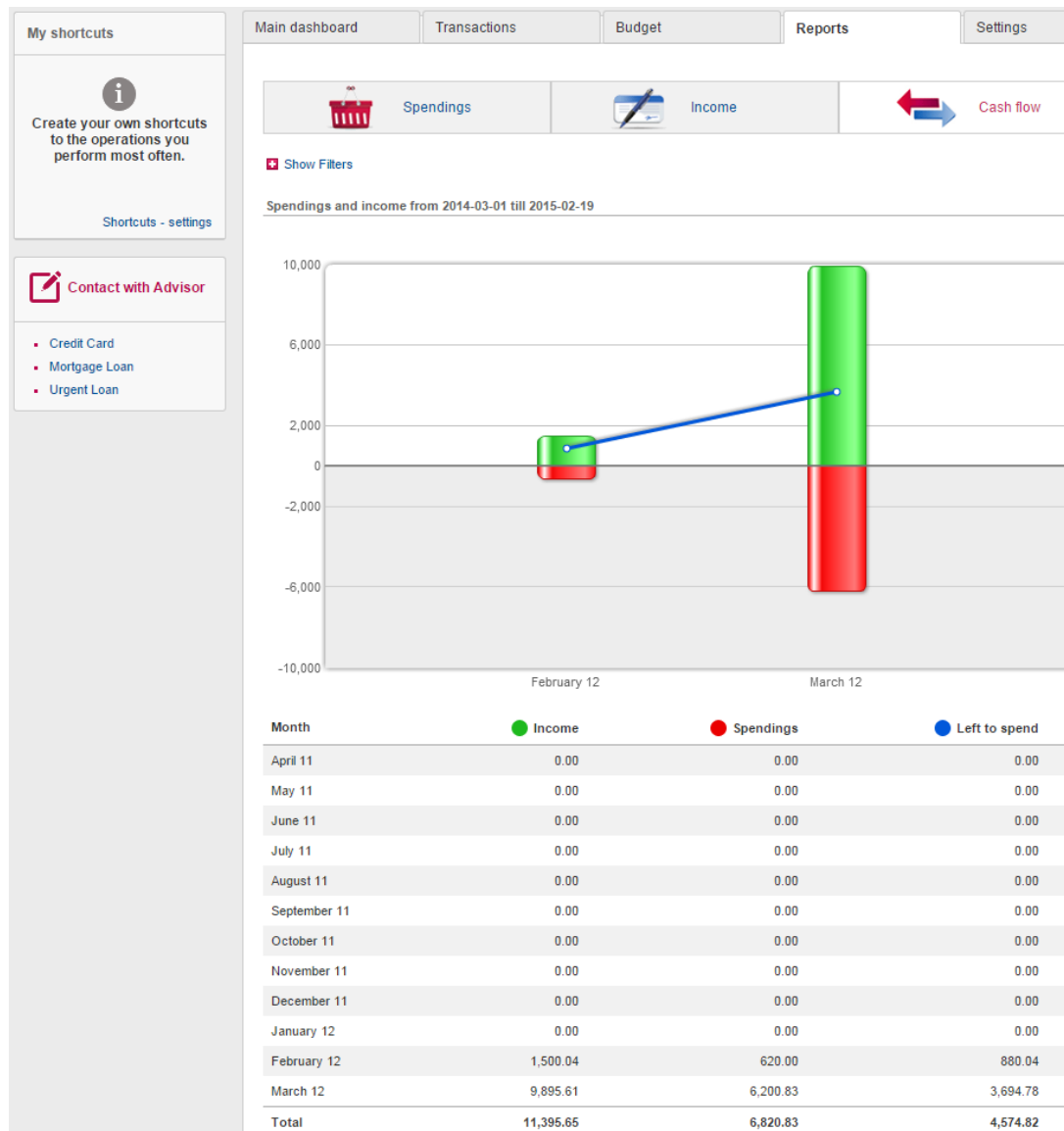
Category

Period



Category	Percent	Amount	
Other spendings, ATMs	62.39%	2,967.35	Show transactions
Food, dining	14.81%	704.23	Show transactions
Shopping, services	8.05%	382.68	Show transactions
Healthcare	7.51%	357.00	Show transactions
Bills	2.63%	125.00	Show transactions
Personal care	2.52%	120.00	Show transactions
Vacation, travel	1.85%	88.00	Show transactions
Consumer loans, fees, taxes	0.25%	11.96	Show transactions
All categories total spendings		4,756.22	





ANNEX 7: POWERPOINT PRESENTATION “REBUILDING THE PERSONAL FINANCE MANAGER” CARRIED OUT BY THIS THESIS’ AUTHOR

Millennium
bank

Rebuilding the Personal Finance Manager

Adapt PFM’s best practices to gain Competitive Advantage

1. Personal Finance Manager

What is the Personal Finance Manager?

1. Personal Finance Manager

A Personal Finance Manager (PFM) is a **website, software, widget or app** which **tracks one's financial activities** across various financial institutions or multiple accounts within the same institution

Role → **Rationally manage client's expenses and savings by:**
 Providing detailed information on the client's account and "financial behavior"
 Budgeting on the basis of this information

A complete and up-to-date PFM is an absolute primary need in today's technologically advanced Polish banking sector

Established Features of a competent PFM:

- Current Balance
- Spendings categorization
- Graphical illustration of the account's balance
- Transaction history
- Bill Split
- Budget generation
- Savings Plan generation
- Calendarization of future transactions & cash availability
- Organized graphical representation of incomes, spendings and direct comparison on a given time period

Interesting new trends in PFM:

- Safe-to-spend notion (=Available balance – Goals – **Scheduled Activities in the next 30 days**)
- User "Tagging" transactions
- Create a Saving Goal and automatically put money aside each day to achieve it in the established time
- Qualitative feedback on spending habits vs. Income (on real-time)
- Compute a monthly spending average and compare the current month's spendings with the average (these will be extended in the Conclusions...)



1. Personal Finance Manager

The Personal Finance Manager is usually catered in 3 possible formats:

MOBILE APP

BROWSER

SMARTWATCH APP

This presentation's main focus will be **show the best practices in the industry & compare Millennium to those on each** and every one of these platforms to:

Understand how Millennium ranks in the domestic competitive environment

Improve Millennium's PFM platform

A Personal Finance Manager is an invaluable tool for a bank customer because it is proven to be **the most effective way of organizing oneself's revenues and expenses**. In Personal Finance just as in business, planning thoughtfully is a necessary skill to success.

"Most people who create a financial plan for themselves – with goals and benchmarks – are by and large the most successful at reaching those goals." Alexa Von Tobel, Founder and CEO of Learnvest

PFM's importance is being boosted by the **rise of the homebanking platforms across the years**. In fact, online banking is now (and has been for a good while) a central part of a bank's operations. Followingly, we'll look at some data which corroborates just that.

1. Personal Finance Manager

What makes the Personal Finance Manager so crucial?

The rise of the e-banking platforms
and their growth potencial

M 5

2. Market Indicators in Online Banking and PFM

In EUROPE

- In 2012, all but one of the Top 10 European banks (by Unique Visitors) experienced growth in this indicator.

Source: "2013 Europe Digital Future in Focus", by ComScore, Inc

Banking –
UniCredit Shows the Fastest Growth Amongst Top 10 Banking Sites



Note: Unique Visitors are the nr. of distinct users requesting pages from the website (including those who don't log in the homebanking platforms).

Deutsche Bank predicts migration to e-banking will hit 60% of the EU population by 2020

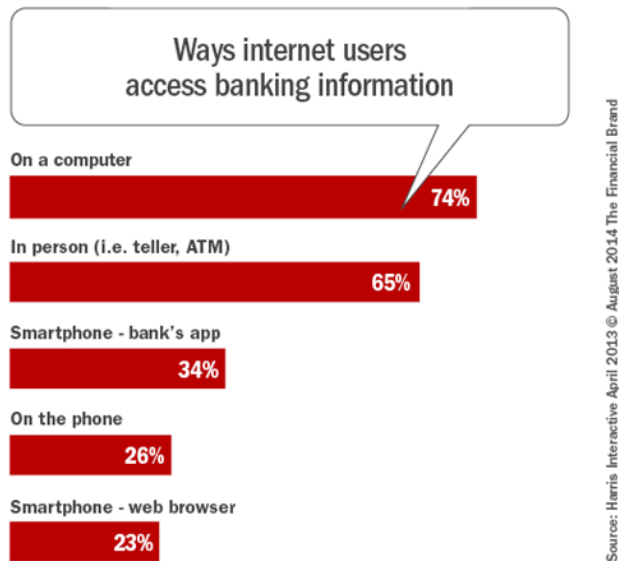
M 6

2. Market Indicators in Online Banking and PFM

In the UNITED STATES OF AMERICA

- An April 2013 report produced the following graphic concerning ways in which U.S. internet users access their banking information.

Source: "Harris Interactive April 2013. August 2013 The Financial Brand

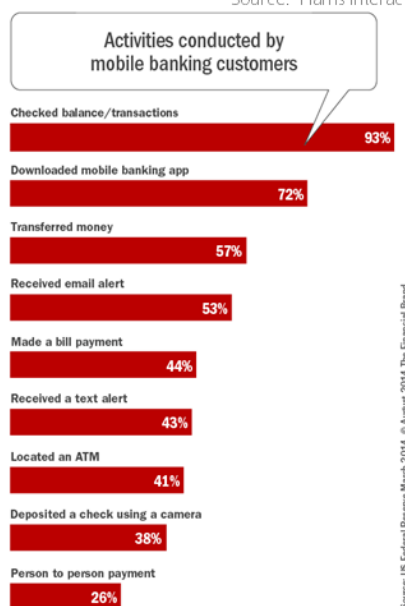


2. Market Indicators in Online Banking and PFM

In the UNITED STATES OF AMERICA

- Another graphic in that same report analyzes the activities mobile users conduct on these exact devices.

Source: "Harris Interactive April 2013. August 2013 The Financial Brand

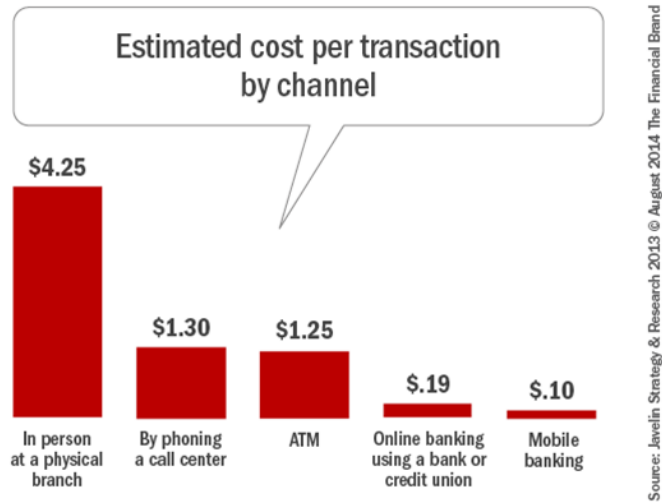


2. Market Indicators in Online Banking and PFM

In the UNITED STATES OF AMERICA

- One of the **major benefits for companies** of having transactions concentrated in their homebanking platform is to **reduce cost per transaction** (especially in comparison with in-branch transactions).
- Given that in-branch transaction costs are largely Fixed Costs and physical overhead and that many banks are hesitant to reduce these two, this reduction in costs is often not completely materialized.

Source: "Harris Interactive April 2013, August 2013 The Financial Brand



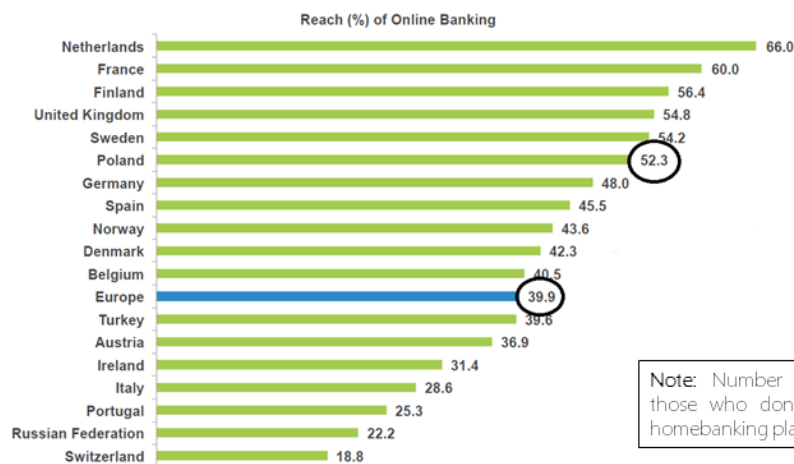
2. Market Indicators in Online Banking and PFM

In POLAND

- 6th highest market penetration rate of Internet Banking in the European Union (**52,3%** of Polish Internet users visit banking webpages vs. **EU average of 39,9%**)

Source: "2013 Europe Digital Future in Focus", by ComScore, Inc

Banking – Penetration Across Europe Netherlands Leads with 66% of Internet Users Visiting Online Banking Sites



2. Market Indicators in Online Banking and PFM

In POLAND

- 20,5 Million individual clients with an Online bank account
- 11,377 Million active individual users (logging-in at least once a month)



More than $\frac{1}{4}$ of the Polish population is an active user of an Online bank account

Working-age (18-64) Polish population

- 77% of Adult Poles own a bank account at a commercial or cooperative bank
- 51% of Adult Poles have access to an Online bank account
- 45,99% of Adult Poles are Active Online Banking users (access 1X/month)



Big Opportunity to increase the number of online users by migration

M 11

2. Market Indicators in Online Banking and PFM

In POLAND

" Polish online banking services are amongst the **most technologically advanced in Europe** and rank very high in terms of **security of payments**. Although the wider banking sector reaches saturation, **Polish e-banking still has a very rosy outlook for further growth** as the younger generation will dominate the market in the future."

Source: Polish Press Agency, Economic Service, August 2013

- Rating Agency FITCH has a Stable Outlook on the Polish Banking sector for 2015:
 - Solid Returns and Double-Digit Return on Equity
 - STABLE Asset Quality
 - Adequate Sector Capitalization



I deduce from both the quote above-displayed and FITCH's outlook for 2015 that the Polish banking sector will go through growth this year, a growth anchored by digitalization of customers rather than acquisition of new ones.

M 12

2. Market Indicators in Online Banking and PFM

Given the assumption that profitability will strongly derive from "digitalization of clients", we'll now enunciate some today-accepted best-practices on homebanking.

In the day and age of the "Entitled Customer", there are 4 PRINCIPLES homebanking services have to absolutely respect:

- **Real time** and **24/7** banking services
- Client access to their financial information **when** and **where needed**
 - Real time, **secure** and **convenient** transactions
 - Simple, **intuitive** and seamless user experiences

The issue of **transactions' safety** is especially important for Polish banks, according to EY's 2014 Global Consumer Banking Survey for Eastern Europe, which states safety of procedures is a reason for complete trust in one's primary financial services provider in 52% of the cases (above global average).

The aforementioned qualities are rather **basic characteristics all e-banking platforms should display** at this time. They represent **necessary but not sufficient features** to form good e-banking and PFM tools.

FUTURE TRENDS

Thus, we should also look at those trends which will dictate the future of those platforms. PKO Bank Polski identified a few:

Consumers more prone to **quickly adopt tech-advanced solutions**

High growth potencial for **Electronic Payments**

More demand for **Investment** and **Savings goods**

All of these trends concern PFM and give indications of direction to follow in improving that tool.

PFM Mobile Platforms

Best Practices

3. Simple.com



Simple.com platform (for browser & application)

Online bank which is said to be revolutionizing the way people save money



SIMPLE

BRIEF OVERVIEW

Simple provides the user a bank account through U.S. Bancorp, a financial services company.

The service includes:

VISA Debit Card

Access to an online banking system, through:

- iOS or Android App

- Simple.com

(both at the user's disposal)

- Simple has **no physical branches**, only online access
- Simple **doesn't admit aggregation of bank accounts** to be used in the Simple platform
- Founded in 2009 in Brooklyn, NY.
- In July 2013, it reached 40,000 clients and total transactions value of over \$1 Billion
- By the end of 2013, it processed 13 debit transactions/minute with an overall customer balance of \$64 Million
- Since 2014 it is a **subsidiary of the Spanish Bank BBVA**

3. Simple.com



Simple.com platform (for browser & application)

Online bank which is said to be revolutionizing the way people save money

2 Major Features (deeply interconnected)

Safe-to-Spend

Feature which takes the balance value and subtracts upcoming bill payments, pending transactions and any Goals the user is saving for (within an horizon of 30 days).

Goals

The user sets the value of the Goal and the time-span necessary to reach it → Simple automatically takes aside a certain amount of money each day

Only way Simple lets the user save money

"Running all my savings via goals has changed my whole attitude toward saving. On a certain level, saving has always felt to me like denying myself fun spending opportunities. In the Simple Game, the opposite has proven true. **Because every goal has a name and a committed plan, and because the transactions are presented in small increments, saving has become an anticipatory pleasure.** In fact, it's getting to the point where if I don't have savings built up, major purchases just aren't as fun."

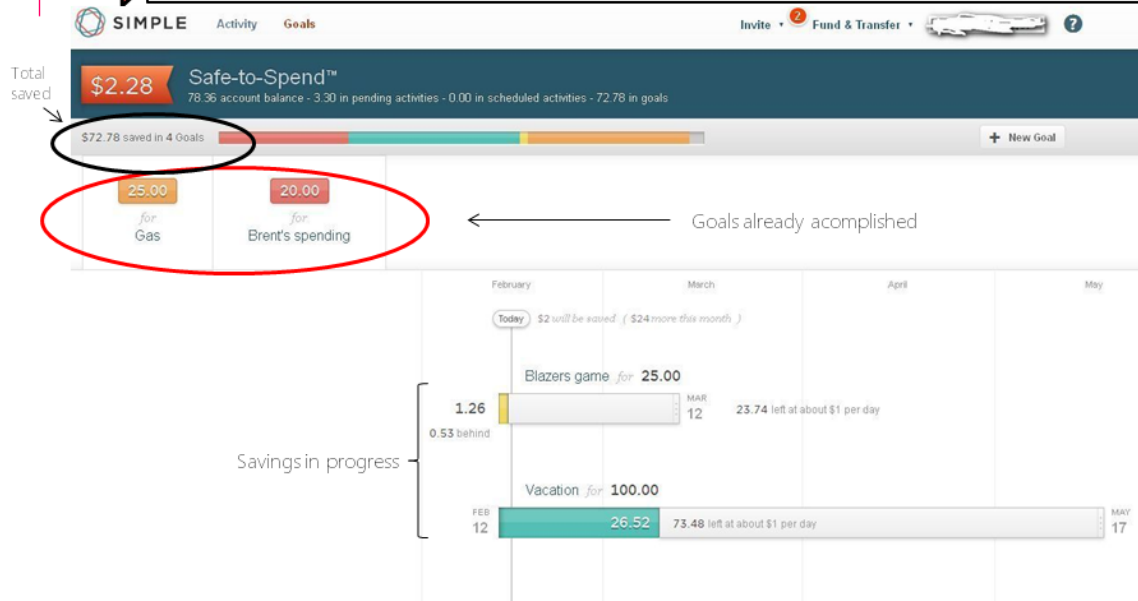
Andre Behrens, The New York Times

3. Simple.com



Simple.com platform (for browser & application)

What the previously mentioned New York Times columnist refers to is visually represented in the picture below



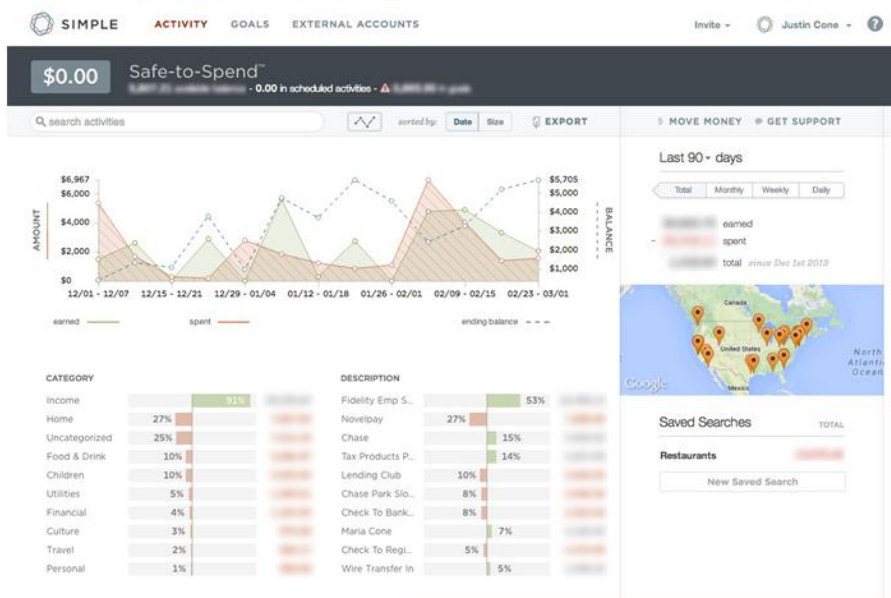
M 17

3. Simple.com



Simple.com platform (for browser & application)

This is Simple.com's (browser) main dashboard, which displays the balance overtime and the categorization of expenses



Simple, as far as I can deduce, has 9 possible categories of expenses

Every transaction made with the Simple Card (Income or Expense)

Goes directly into the Simple platform, already categorized (without the need for the user to manually insert it)

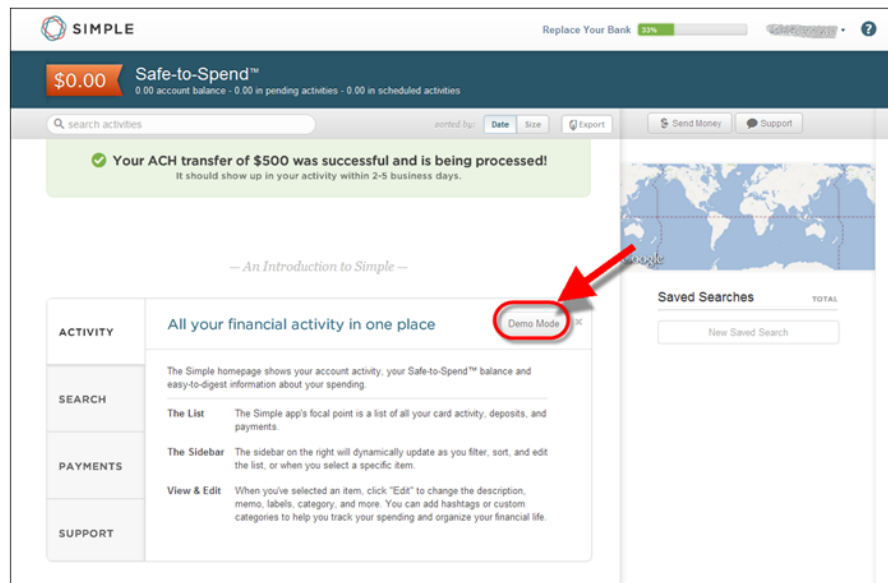
M 18

3. Simple.com



Simple.com platform (for browser & application)

This is Simple's screen after the 1st login, in which one can go through the Demo account (especially useful for new users). By clicking on the demo, the user will access the actual homepage of Simple (represented next slide)



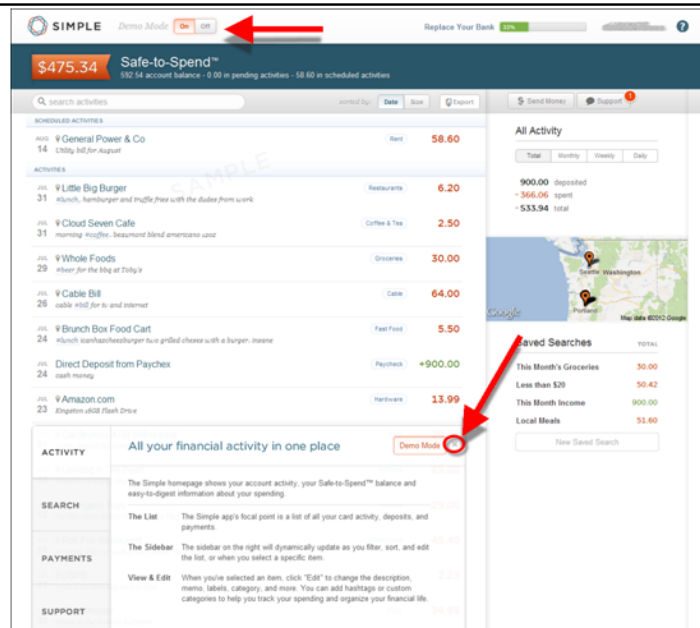
M 19

3. Simple.com



Simple.com platform (for browser & application)

This is Simple's homepage screen with a Demo-only explanation on the lower part of the display

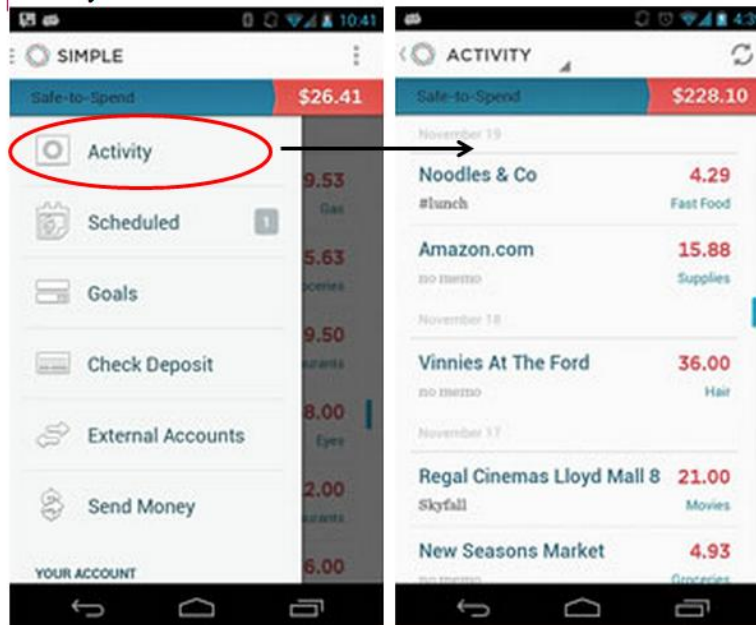


M 20

3. Simple.com - Mobile

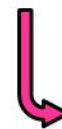


Simple.com platform (for browser & application)
In the mobile Application, this is Simple's main menu



Activity shows the record of transactions, as shown on the left.

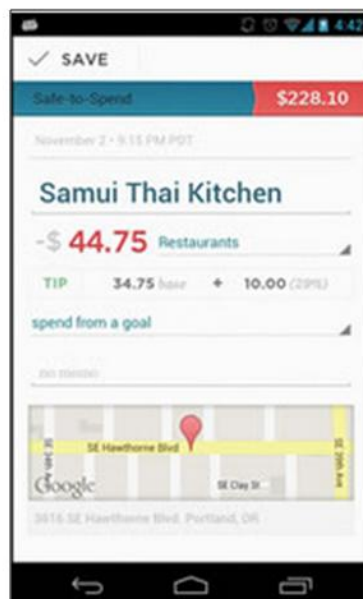
By clicking on each Activity, the user will have access to a display as represented in the next slide.



3. Simple.com - Mobile



Simple.com platform (for browser & application)
Details of the Activities



The screenshot shows the **details of an activity**, namely:

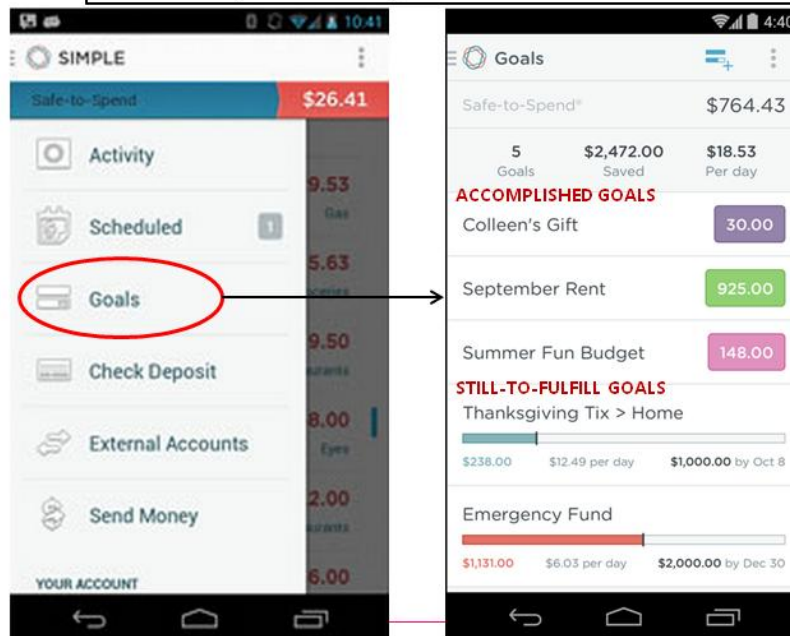
- Name for the spending (given by the user)
- Amount of money spent
- Categorization
- Whether or not the money was spent from a goal (taking money out of the savings for a goal)
- Location where the spending occurred

3. Simple.com - Mobile



Simple.com platform (for browser & application)

The Goals feature is probably Simple's flagship tool and enables the user to check his savings day-by-day and watch the Savings bar fill until the goal is reached.



The top of the screen on the right features the Safe-to-Spend amount, how much money was saved, divided by which goals and per day. Then it proceeds to list the accomplished goals and finishes with the ones still to fulfill.

The Goals feature is extremely useful because a considerable amount of people think their money can only cover expenses and nothing more, which most times isn't the case if you save little by little, everyday. Plus, Goals introduce a 'gamification' of the savings effort, which makes the process fun and enjoyable, rather than a sacrifice.

M 23

3. Simple.com- Mobile

There is, however, a **fundamental problem** about Simple's Safe-to-spend feature

Practical Example

The user has 2000 PLN in his Simple account and is trying to save 1000 PLN over 10 days.

It's only logical that Simple puts apart 100 PLN/day from the Safe-to-Spend bucket towards the Goal.

Thus, on the 1st day of Savings for this goal, the Safe-to-Spend value would indicate a value of 1900 PLN

But if the user indeed spends those 1900 PLN, he won't be able to reach his goal.

CONCLUSION: Safe-to-Spend is just an indication of what amount of money to spend, rather than a dogmatic value that shouldn't be interpreted and put into context.

SOLUTION: Subtract from the Current Balance the whole Goals, Upcoming bill payments and Pending Transactions amount (which gives a monthly Spendables amount, as LevelMoney has) and divide this outcome by the number of days left to reach the goal to get the Average daily safe-amount to spend (more accurate measure). In this case, this would be:

$$(2000-1000) / 10 = 100 \text{ PLN}$$

M 24

4. LevelMoney - Mobile



LevelMoney platform (mobile application for iOS and Android)

Another mobile platform focused on the features of what's advisable to spend in a certain time to achieve a goal

LevelMoney proposes a Spensible notion (approximate to the Safe-to-Spend notion) which tells the user how much can he have left to spend today, this week and this month. This Spensible concept automatically adapts after each purchase the user does.

These circles could be a good addition to the Safe-to-Spend notion → the circles representing this Safe-to-Spend number.



M 25

5. Moven - Mobile



Moven platform (mobile application for iOS and Android)

Online bank. Includes app + card. Divides expenses on Wants and Needs depending on whether they're necessary or not

Because Moven has only 4 engineers (in comparison with 40 engineers from Simple.com) their vision for the app is achieved at a slower pace. This is why Moven is announcing the Coming Soon features (idealized but not yet completed). Here will be shown the current ones and the others still to come.

Current Major Features

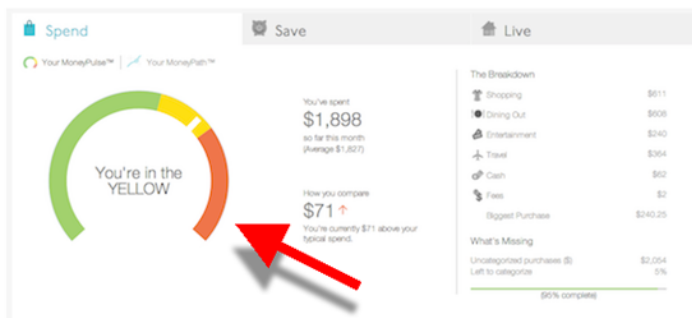
Instant Mobile Receipt: instant feedback on every purchase, so that customers can make adjustments in real-time to meet their personal finance goals (how much did the user spend? & shape of the user budget-wise)

MoneyPulse: calculates an average expenditure per period and identifies if the user is spending above that average (screenshot below)

Online Data Aggregation: link checking, savings, debit and credit accounts to get feedback on the entire spectrum of expenditures

Pay a Friend: send money to a Facebook friend, mobile number contact or email contact

Move Money: move money in and out of the Moven account with a few simple "clicks on the mouse"



"Moven focuses on **providing instant feedback** so a customer can make adjustments to their behaviors in real-time to meet their personal finance goals. This is similar to the experience of many wearable health apps because just like physical wellness, **financial wellness is an ongoing effort that can't be confined to neat buckets in a budget and little impact is made when reviewing days or weeks after the fact.**"

Alex Sion, President of Moven

M 26

5. Moven - Mobile

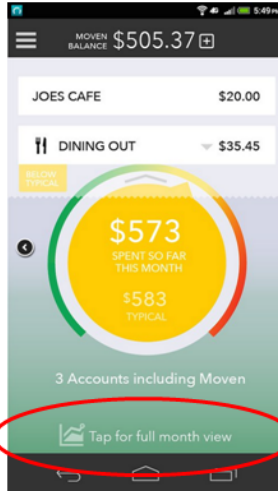


Moven platform (mobile application for iOS and Android)

Online bank which is said to be revolutionizing the way people save money. Includes app + card

Moven Balance

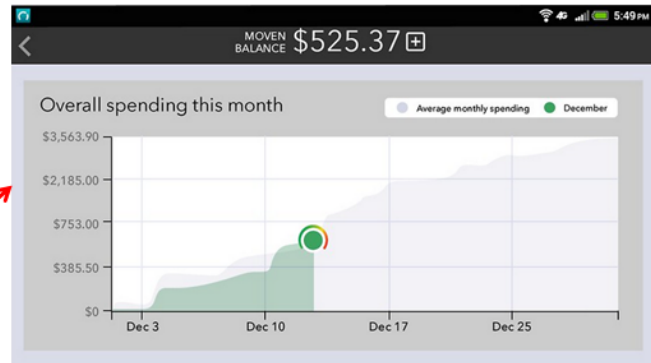
Moven Balance: This is a key aspect of Moven; a balance which shows up on the smartphone screen whenever there's a new expense



In Development Features

Suspend your card: one can immediately block spending from the card using the app; useful in case of theft or robbery

The graphic below compares the average spending on each month day with that of the current month



M 27

5. Moven - On Android SmartWatches



Moven platform (mobile application for iOS and Android)

Online bank which is said to be revolutionizing the way people save money. Includes app + card

Moven's most recent breakthrough move was to extend its service to the fast-growing **"Wearables" business**. In the words of the President: "Financial wellness is a critical experience currently missing in wearable technology right now, but it's a necessary one. (...) Wearables are poised to help users adjust their spending habits as fast and simple as glancing down at your watch".

Statistics show that in 2014 the wearables market already accounted for \$14 Billion and is estimated to grow to \$70 Billion in 2024 (a 500% growth). While the dominant trend amongst this sector still is healthcare (merging fitness, medical and wellness), the finance sector has a promising potential. Indeed, it is expected that by the end of the decade that advanced electronics (in which financial services play a big role) will match the healthcare market in wearables.

Moven currently provides **spendings' notifications** and a **current balance view**



M 28

5. Moven - On Android SmartWatches

Moven was a **1st mover** in applying Personal Budgeting and "Easy-saving" tools to smartwatches, having its app currently available at the **Samsung Galaxy Gear** and **Motorola Moto 360 watches** (only Android devices up until now since Apple Watch is still awaiting a release, scheduled for April 2015).

50/50

Moven has a **50/50 split between iOS and Android users**, which suggests the company will develop an app for the Apple Watch when it comes out (Samsung and Apple watches can only be fully used with recent smartphones from those same brands).

Apple Watch vs. Android Watches

NFC technology for payments is **incorporated in the Apple Watch** (to work in consonance with Apple Pay terminals) but not on the currently available Android watches.

"Google and Apple are pursuing different philosophies in terms of wearables" – Moven's COO, Ramy Serageldin
There is indeed a difference in approach from Apple to Android's developer Google on the smartwatch business.

Apple → More interactivity

Google → "Glance or Go" or "Thumbs-up, Thumbs-down" approach

Bearing this into consideration, Moven developed its Android smartwatch platform basing it on the Instant Feedback on spendings concept, which Moven expects that will induce behavioral changes (essence of PFM)

Main Aim →

- Let clients review Balance and the Green, Yellow or Red bar that compares the current month's spendings with the other month's (Money Pulse)
- Provide real-time feedback on spendings as they're being made (in both the Balance and the bar)

Moven's Founder & CEO Brett King personally believes that the smartwatch's competitive advantage over other devices is on delivering alerts. On this regards, he says: **"Notification becomes the key mechanism for engagement"**.

M 29

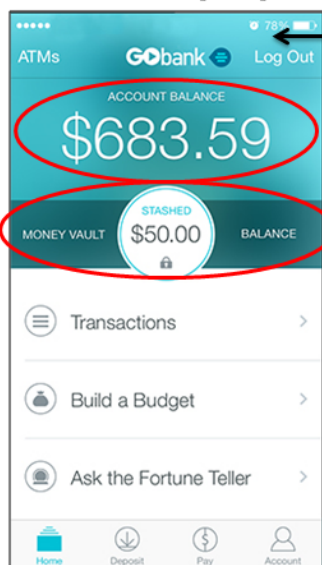
6. GoBank - Mobile



GoBank platform (mobile application for iOS and Android)

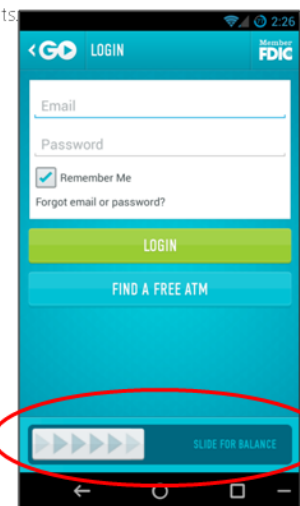
It has a very informal and anti-big banks communication strategy. Includes app + card.

I believe GoBank is a bit less advanced in its PFM features than SIMPLE and MOVEN and so I'll skip an extensive explanation of all its features and will go straight to the ones which I find more applicable to an improvement of Millennium's PFM.



MoneyVault – A mechanism that **stashes cash to save it in a vault**. At any given time, the user can withdraw his money from the vault and transfer it back to his normal account. The main screen of the app shows the balances of both accounts.

Balance Bar – This info is accessible to the user even if he doesn't log in the account. You can't do any operations apart from peeking at the balance, which saves the account in cases of robbery or theft, while introducing a useful feature.



M 30

6. GoBank - Mobile

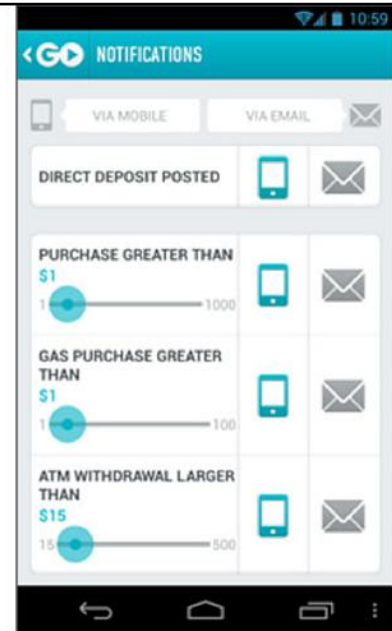


GoBank platform (mobile application for iOS and Android)

It has a very informal and anti-big banks communication strategy

GoBank lets the user **choose which notifications/alerts of expenses he will receive** (instead of being notified on every spending made) in **whichever channel of communication** (mobile or email).

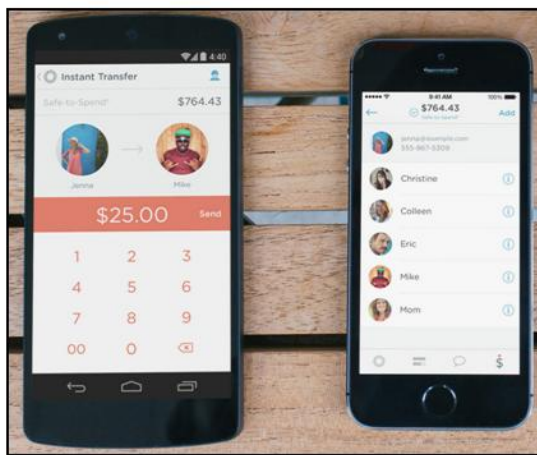
This is a feature GoBank's competitors don't have and can be extremely useful for the user, who might lose interest in notifications if they're too frequent (in the same way a person gets tired of receiving too many emails by the same company).



M 31

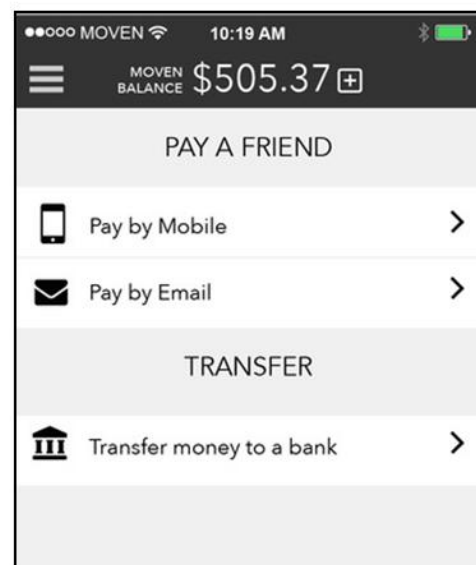
7. Personal Finance Manager - Mobile

Simple.com has a feature which allows the **Instant transfer of money to contacts with Simple accounts**. The step to fulfill the transactions are simply select the desired Contact, identify the value of the transfer and then click Send.



The Simple.com user can add a contact through the other person's phone number or email address, which represents a "more user-friendly approach" to a service similar to Moven's and GoBank's.

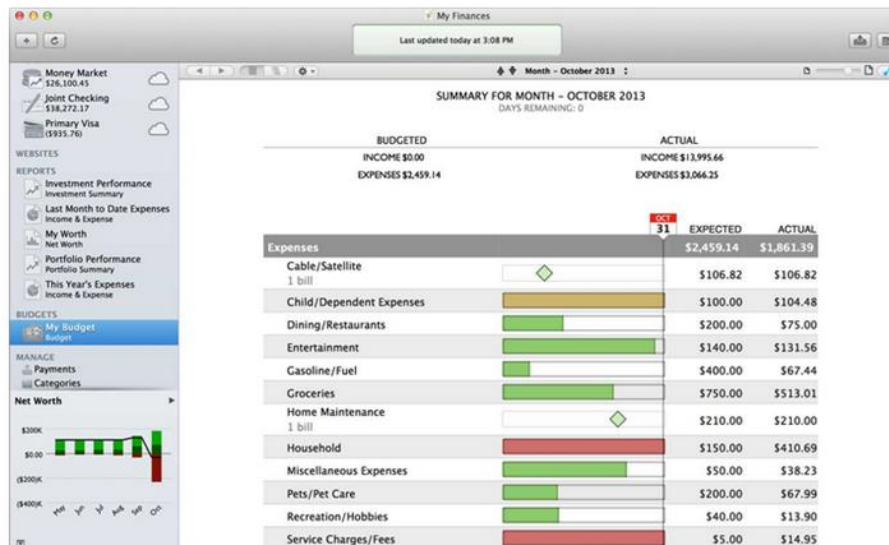
Moven and GoBank have a similar feature called **Pay a Friend**, either by inserting the recipient's mobile phone number or email address.



M 32

8. The iBank App

- iBank 5
- This app has a very favorable consensus concerning its quality and usefulness when taking into account top app reviews and rankings on the Mac App Store, as well as buzz and word-of-mouth reviews.
- This screen shows a graphical and numerical comparison between Expected money spent (after a Budget is made) and Actual expenses; can be interesting to be considered as a suggestion for PFM improvement



M 33

8. The iBank App

- iBank 5
- This screen displays all recent transactions, not only categorizing them but also indicating the type of transaction they were (Charge, Withdrawal, Deposit). → Another feature worthy of the new PFM

My Finances
Last updated today at 3:08 PM

Date	Type	Category	Payee	Note	Withdrawal	Deposit	Balance
10/31/13	Charge	Tots Store			\$78.23		(\$935.76)
		Child/Dependent Expenses					
10/30/13	Withdrawal	Zappos.com			\$75.00		(\$857.53)
		Clothing/Shoes		ZAP*ZAPPOS.COM			
10/23/13	Charge	Fleet River Ranch			\$67.99		(\$742.38)
		Pets/Pet Care					
10/23/13	Charge	Sunoco			\$67.44		(\$674.38)
		Gasoline/Fuel					
10/23/13	Charge	Chuck E Cheese			\$7.23		(\$606.95)
		Entertainment					
10/23/13	Charge	Target			\$375.00		(\$599.72)
		appls					
10/27/13	Withdrawal	AbelBooks.com			\$10.42		(\$782.53)
		Recreation/Hobbies		ABEBOOKS.COM			
10/27/13	Withdrawal	AbelBooks.com			\$3.48		(\$772.11)
		Recreation/Hobbies		ABEBOOKS.COM			
10/27/13	Withdrawal	SITTERCITY			\$26.25		(\$768.63)
		Child/Dependent Expenses		SITTERCITY			
10/9/13	Withdrawal	Amazon.com Kindle			\$8.03		(\$224.72)
		Entertainment		Amazon Services-Kindle			
10/6/13	Withdrawal	Amazon.com			\$16.75		(\$216.69)
		Household		Amazon.com			
10/7/13	Withdrawal	Amazon.com			\$39.89		(\$199.94)
		Household		AMAZON MKTPLACE PMTS			
10/6/13	Withdrawal	Amazon.com			\$54.05		(\$160.05)
		Household		AMAZON MKTPLACE PMTS			

M 34

8. The iBank App

- iBank 5
- iBank 5's biggest quality is the diversity and detail of the Reports they produce.
- Overall, the platform offers 10 different types of reports:
 - Income & Expense
 - Net Worth
 - Expense Timeline
 - Category Detail
 - Portfolio Summary
 - Investment Summary
 - Payee Summary
 - U.S. Tax
 - Debt/Liability
 - Forecast

8. The iBank App

- iBank 5's Tax Report

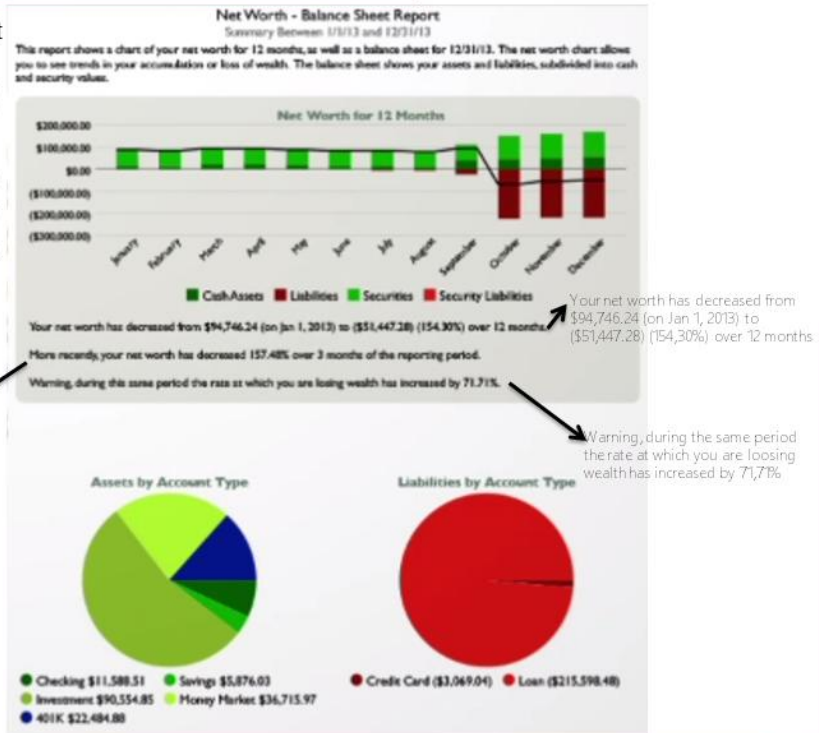
Tax Report		
Summary Between 1/1/13 and 12/31/13		
Category	Taxable Categories	Total
Category	Taxable Categories	Total
Income	Income	
Paychecks/Wages	Paychecks/Wages	\$13,129.00
Income Total	Income Total	\$13,129.00
Expenses	Expenses	
Expenses Total	Expenses Total	\$0.00
TOTAL	TOTAL	\$13,129.00
	Capital Gains	
	Capital Gains	
	Amount	
	Amount	
Realized Gains	Realized Gains	
Short-Term	Short-Term	\$437.96
Long-Term	Long-Term	\$0.00
Unrealized Gains	Unrealized Gains	
Short-Term	Short-Term	\$1,634.35
Long-Term	Long-Term	\$71,517.43
Income	Income	
Dividend	Dividend	\$1,522.74
Interest	Interest	\$0.00

8. The iBank App

■ iBank 5's Net Worth Report

This report shows a chart of the user's net worth and balance sheet for the previous year.

The net worth chart allows the user to see trends in the accumulation or loss of wealth. The balance sheet shows the user's assets and liabilities, subdivided into cash and security values.



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8. The iBank App

■ iBank 5's Expense Timeline

This report organizes Income and Expenses through categories and months of the year. It spans the whole year.

Expense Timeline
Summary Between 1/1/13 and 12/31/13

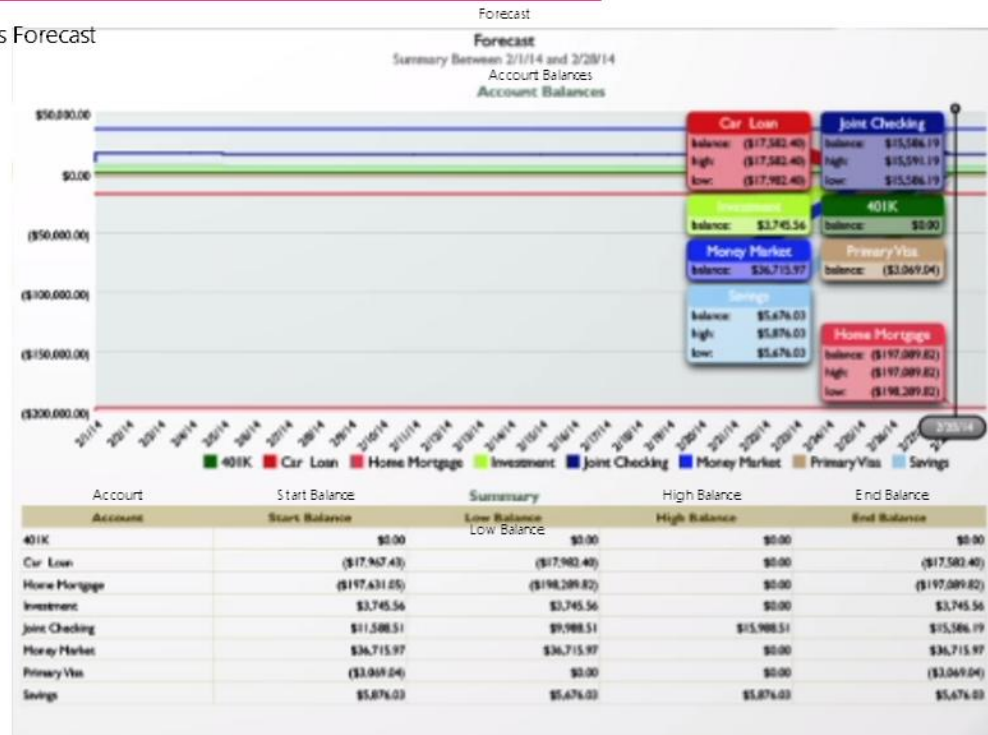
Income & Expenses 1/1/13-12/31/13

Category	Jan	Feb	Mar	Apr	May	Jun
Income						
Insurance	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Insurance - Other	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Investment Income	\$1.55	\$0.95	\$1.25	\$2.55	\$1.82	\$1.40
Paychecks/Wages	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Income Total	\$1.55	\$0.95	\$1.25	\$2.55	\$1.82	\$1.40
Expenses						
ATM/Cash Withdrawals	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Auto	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
AutoFuel	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Automotive Maintenance	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Clothing/Shoes	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Dining/Restaurants	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Entertainment	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Entertainment - Other	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Fitness/Personal Care	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Gasoline/Fuel	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Groceries	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Home Improvement	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Home Maintenance	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Household	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Miscellaneous Expenses	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Pet/Pet Care	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Recreation/Hobbies	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Service Charges/Fees	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

M 38

8. The iBank App

iBank 5's Forecast



M 39

8. The iBank App

iBank 5's Payee Summary

- This report shows the recipients of recent payments made by the user and the recent sources of income

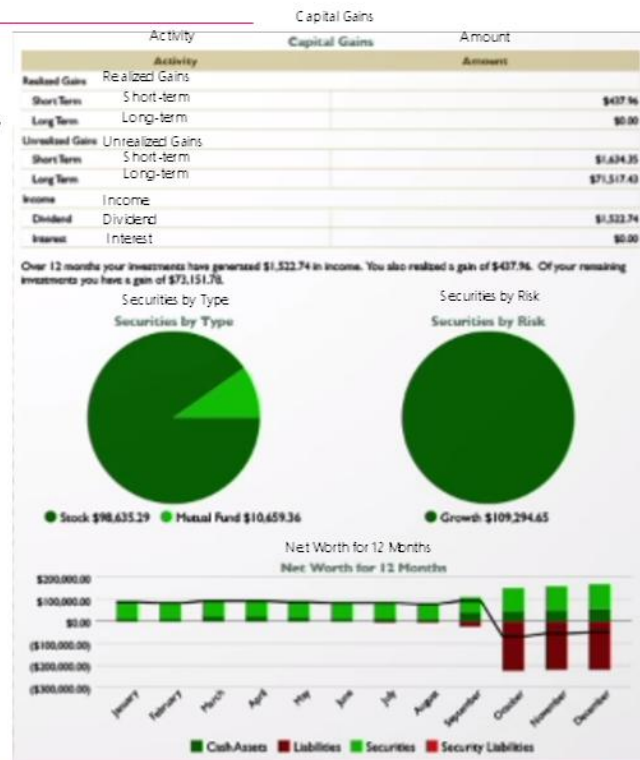
Payee Summary

Payee	Amount
No Payee	(\$5,247.33)
Amazon.com	(\$209.22)
Amazon.com Kindle	(\$1.99)
American Automobile Association	(\$76.00)
Apple Inc	(\$148.44)
AT&T	(\$1,070.20)
Ben & Jerry's	(\$14.37)
Big Apple Stores	(\$58.34)
Bradley Airport Windsor Locks Ct	(\$25.52)
Brown & Roberts Ace HI Installation Vt	(\$23.58)
Brownells, Inc	(\$61.94)
Cash Withdrawal	(\$5,080.00)
Charter Cable	(\$200.00)
CHECK	(\$106.82)
Charles Horse Sweeney Nh	(\$109.15)
Complan-Appliance Inc. 88888889104Vt	(\$194.40)
COLONIAL SAVING	(\$1,129.84)
Credit Interest	\$0.28
Deposit	\$33,933.00
Dividend - Dividend represents a .0001 of 0.14% for a 30 day period	\$0.03
Dividend - Dividend represents a .0001 of 0.14% for a 31 day period	\$0.05
Dividend - Dividend represents a .0001 of 0.17% for a 30 day period	\$0.01
Dividend - Dividend represents a .0001 of 0.28% for a 30 day period	\$0.94
Dividend - Dividend represents a .0001 of 0.28% for a 30 day period	\$4.48
Dividend - Dividend represents a .0001 of 0.28% for a 31 day period	\$4.79
DIVIDEND ON 1.000000 SHARES OF VFIK	\$20.02
DIVIDEND ON 1.002776 SHARES OF VFIK	\$19.47
DIVIDEND ON 1.004376 SHARES OF VFIK	\$19.67
DIVIDEND ON 1.006387 SHARES OF VFIK	\$19.10
DIVIDEND ON 1.008404 SHARES OF VFIK	\$20.04
DIVIDEND ON 1.010413 SHARES OF VFIK	\$19.40
DIVIDEND ON 1.012429 SHARES OF VFIK	\$19.30
DIVIDEND ON 1.014439 SHARES OF VFIK	\$18.29
DIVIDEND ON 1.016443 SHARES OF VFIK	\$18.84
DIVIDEND ON 1.018456 SHARES OF VFIK	\$19.81
DIVIDEND ON 15 SHARES OF UNP @ .6900	\$10.35
DIVIDEND ON 15 SHARES OF UNP @ .7900	\$11.85
DIVIDEND ON 360 SHARES OF YDIO @ .2800	\$102.29
DIVIDEND ON 360 SHARES OF YDIO @ .2900	\$105.25

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8. The iBank App

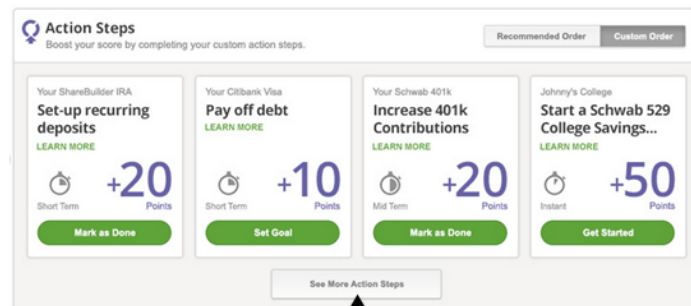
- iBank 5's Investment Summary
- This report shows an organized overview of the Investments of the user.



M 41

9. FlexScore

- This app gives each user a score depending on his Assets, Debt, Investments, Income and every other aspect of his financial health. A score of 1,000 is the goal, which means Financial Independence.



The app suggests some **Actions Steps** to improve his score, depending on the "health state" of his finances. These are described as little steps towards financial independence.

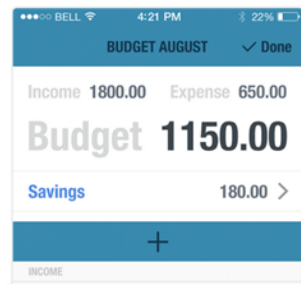
M 42

10. BUDGT

- The app is designed for students and other users with small incomes. The focus of the app is to keep operations within the app (enter expenses, track the budget and log out of the app) as simple as possible.

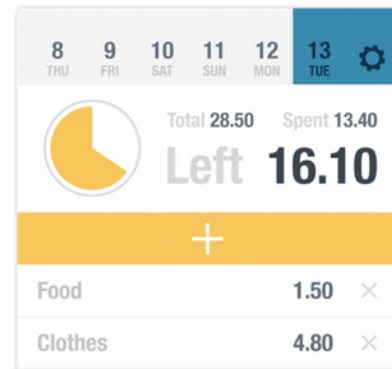
Personal Budget

User sets up his individual monthly budget with income and expenses, all presented in the following format:



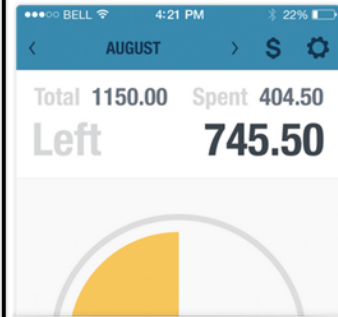
Daily Tracking

This feature tells the user how much he can spend each day, a value which is updated each day based on previous expense habits. With the help of the calendar bar displayed below the user can open past days and enter forgotten expenses there.



Big Picture

BUDGT provides a Left amount of money, which is what the user can still spend until the end of the month without compromising the value allocated for savings.



11. The Case of Turkish Banks

Turkish Banks are amongst the most advanced in the whole world when it comes to technology, and that reflects on how many people use the internet-powered banking services. Turkey's second-largest bank, Garanti, is often given as the blueprint for innovation in banking. Furthermore, we'll look at some of this bank's app's most interesting features.



Source: <http://www.ing.com/Newsroom/All-news/NW/Cash-no-longer-king-Mobile-banking-still-rising.htm>

11. The Case of Turkish Banks

Turkish Banks are amongst the most advanced in the whole world when it comes to technology, and that reflects on how many people use the internet-powered banking services. This is partially due to demographics (half of the Turkish people are under 30 and roughly 60% age between 15-54 y.o.)

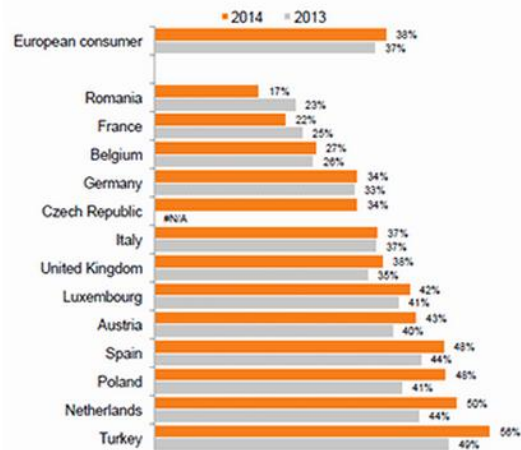
A survey from ING Bank clearly shows how Turkey ranks as the top European market in mobile banking usage and how, generally, that has brought a number of benefits for the user, namely him "being more in control of his finances"

Source: <http://www.ing.com/Newsroom/All-news/NW/Cash-no-longer-king-Mobile-banking-still-rising.htm>

THE QUESTION

Do you use mobile banking?

Percent who answered "yes"



Sample size: 2014 = 12,102 and 2013 = 11,724

THE QUESTION

How has mobile banking changed the way you manage your finances?

Percent who answered "Since using mobile banking..."



Sample size: 4,545

11. The Case of Turkish Banks

In the ING report, it is written: "Turkey has the largest share of internet users who use mobile banking, making it the top mobile banking "hotspot" again in 2014. Turkey has the eighth highest use in the developed, internet adjusted measure but as internet penetration increases, mobile banking is set to rise. Uptake rose in nine of 13 countries surveyed, although increases and decreases of 3% or less may be due only to sampling variability and could be considered as representing no change."

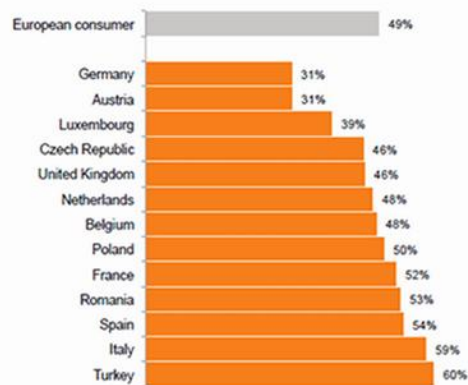
Source: <http://www.ing.com/Newsroom/All-news/NW/Cash-no-longer-king-Mobile-banking-still-rising.htm>

Turkey also has the greatest acceptance (amongst countries surveyed) of people towards the possibility of general utilization of digital currencies. Plus, Turkey had the most percentage of people whom use less physical cash today than 12 months ago (survey conducted in late 2013/early 2014 and results published on May 2014). Finally, Turkey is also one of the very few early-adopters of contactless payments (not shown in the graphics below)

THE QUESTION

"I use physical cash much less than 12 months ago"

Percent who answered "strongly agree" or "agree"

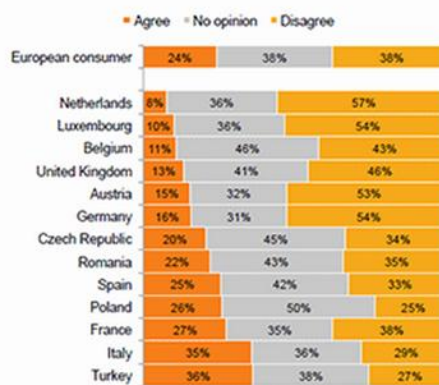


Sample size: 12,603

THE QUESTION

"Digital currencies – such as Bitcoin – are the future of spending online"

Percent who answered "agree", "I don't have an opinion" or "disagree"



Sample size: 12,603

11. The Case of Turkish Banks

Of all the Turkish banks, Garanti is the most technologically advanced, notoriously at-all-times developing services for the newest softwares, platforms, etc.

Garanti offers the iGaranti platform. Some of its most notable features are:

Bump to Transfer feature → Consists of the possibility of Garanti users sending money for free to others by keeping two smartphones in close proximity. The service is also available if the recipient is not a Garanti customer, in which case he can withdraw the money at any Garanti ATM. This feature can be accessed for free.

Live: have live updates and financial offers in real-time

Social: send payments to friends via Facebook

More than touch: voice control to support hands-free money transfers

iWallet: Perform almost every purchase through the smartphone

SmartShopping: According with the users' consumption habits and location, the app suggests favorite stores with products at discount

A real mobile wallet: To access physical cash, iGaranti allows users to securely pre-alert an ATM at the arrival of the actual user, with no need for a physical card

Check your spending in a given month with your peers: iGaranti lets the user compare what he has spend in a certain category, with what friends spent in that same category (see screenshot on the right)



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11. The Case of Turkish Banks

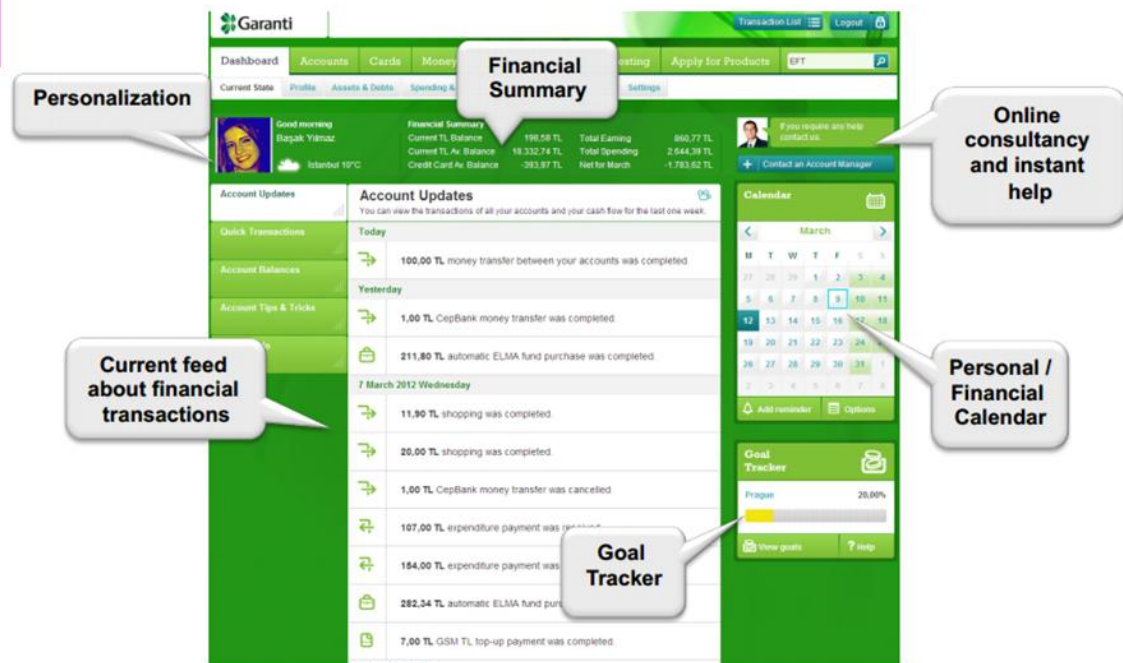
As previously mentioned, Garanti offers the critically acclaimed iGaranti mobile platform. The platform is based on the below-shown pillars, according to Nuance.co.uk's report named *Digital Banking at Garanti Bank*. From those, the one which can be of better use for this presentation is the **Proactive Financial Status**



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11. The Case of Turkish Banks

This is Garanti's Dashboard layout:



11. The Case of Turkish Banks

More features of iGaranti's PFM:

Consult one's financial account in a detailed and graphical fashion

Online Personal Finance Management

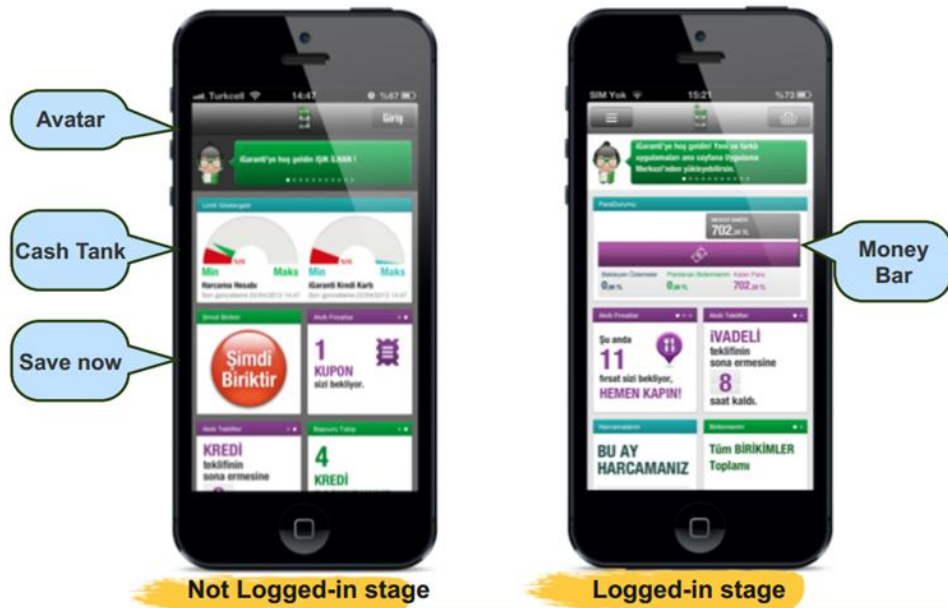
- Customers are able to see their asset/debt and spending/earnings in a consolidated way
- Spenpings by category and showing them over time are the key PFM features



11. The Case of Turkish Banks

In the smartphone app, iGaranti has the following aspect:

iGaranti Dashboard



11. The Case of Turkish Banks

In the smartphone app, iGaranti has the following aspect:

iGaranti Money Bar/ Forecast



11. The Case of Turkish Banks

In the smartphone app, iGaranti has the following aspect:

iGaranti Special Network/ Nearby Deals



Integration with Foursquare, Facebook and Twitter!

iGaranti connects Facebook, Twitter and FourSquare to help users send money to friends and family

11. The Case of Turkish Banks

In the smartphone app, iGaranti has the following aspect:

iGaranti Smart Shopping, iWallet



11. The Case of Turkish Banks

In the smartphone app, iGaranti has the following aspect:

- **iGaranti's iWallet** → has the goal of performing almost all transactions traditionally done with a wallet with a smartphone. iWallet is designed to be used in both online and offline shopping. For this to happen, **QR Codes are often used**



- **Online Shopping** → User selects the option "pay with QR code" on participating websites, which then direct the user to the iGaranti QR Payment site. After, the user scans the code and selects a previously-saved card to carry out the payment. To confirm the purchase, a code is generated, which the user enters on the website.
- **Offline Shopping (Physical Stores)** → QR code is printed on a receipt which the user scans (by taking a photo). The user then selects the saved card to pay and, once again, a code is generated to confirm the purchase. This code has then to be entered into the point-of-sale (POS) device in-store. At this point, the transaction is complete.

11. The Case of Turkish Banks

In the smartphone app, iGaranti has the following aspect:

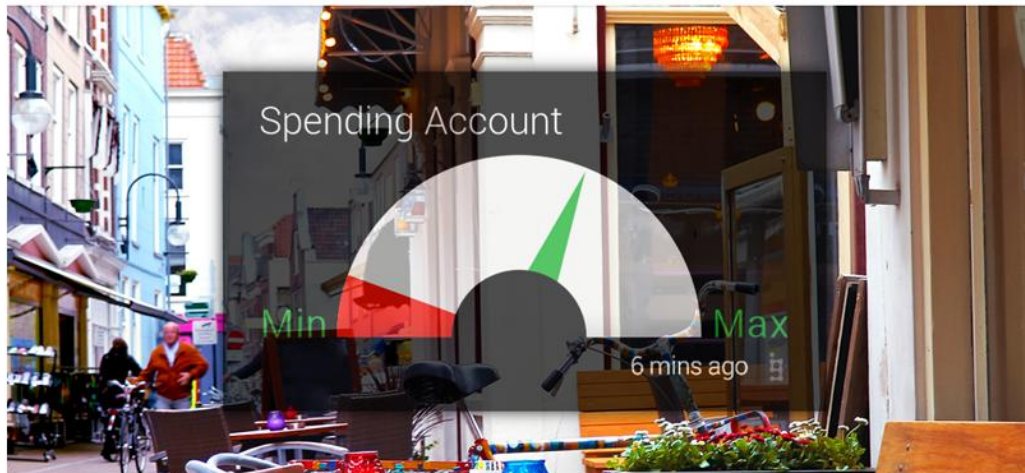
- **iGaranti's SmartShopping** → if the user is registered in the social network FourSquare, by linking his account on this platform to the account in Garanti, the bank can track the user's location and identify which of the user's "favorite stores" are nearby. The "Favorite Stores" are identified according to the user's shopping & spending habits). The user then receives notifications on which of those stores are having coupons/discounts at that moment.



11. The Case of Turkish Banks

Apart from being a worldwide leader in Innovation for the mobile platform, Garanti was also the 1st bank in the world to have Google-approval for an application soon-available on Google Glass. With this, the user will have access to the following (as in Glass.google.com):

Garanti Bank customers who use iGaranti application on their phones can see their iGaranti push notifications, limit indicator, smart shopping offers, coupons and market information through iGaranti Glassware. So, the customers can check their credit card limit, account balance, market information, smart shopping offers and coupons with iGaranti Glassware without using their phones.



PFM in web browsers

Domestic Comparison & Best Practices

12. Benchmarking Analysis with Domestic Competition

- This analysis will focus on the Top 5 banks in Poland, in terms of Assets (See table in Annex 1 – slide 110 – to consult the list). These are: **Bank Polski**, **Bank Pekao**, **BZWBK**, **mBank** and **ING BSK**.

- Out of these 5 banks, only **mBank** and **ING** have PFM platforms. Therefore, the upcoming benchmarking analysis will focus more on these 2 than the other 3.



With PFM

No PFM



Bank Polski



12. Benchmarking Analysis with Domestic Competition

- On this section, there will be **shown examples of PFM platforms of several banks** (some Polish, some from elsewhere in the world) with the intention of comparing those with Millennium's platform and draw conclusions on how to improve the latter.
- We'll start by analyzing the 5 biggest banks in Poland (considering the volume of Assets). We'll show screenshots of their PFM tools (in case they have it), then proceed to analyze other banks and finally carrying out a board-comparison of those with Millennium's features.
- We'll commence by the biggest bank in Poland, the publicly-owned PKO Bank Polski



Bank Polski

PKO doesn't have a PFM platform per-se (no Savings Plan, Calendarization nor Categorization, Calendarization or Benchmarking of expenses, no graphical representation of account's stats), so I've decided to show their whole website, which resembles bits and pieces of a real PFM.

Bank Polski's iPKO platform is divided into 8 major categories

- Accounts** → summary of all accounts, deposits and loans available
- Transactions** → status of every transaction on the bank; allows making transfers
- Cards** → List of Credit Cards issued, check credit limit, amount of funds available and credit card status
- Funds** → Information about the client's Investment Funds
- Insurance** → allows to buy insurance
- Top-Up** → Charge the phone
- Access** → allows to edit the extent of one's access to the account, to both the account owner and the representatives of it
- Contact** → Customer Service

12. Benchmarking Analysis with Domestic Competition

Summary of the Accounts

iPKO Client: Paul IPKO | Customer number: 12345678
Last login: successful 2008-08-16 8:24:57 | Failed 2008-04-16 11:10:35

Accounts Transactions Cards Funds Insurance Top-up Access Contact

→ Personal and business

- Account details
- Investments
- Loans
- Account History
- Means unsettled
- Lifts

List of personal and corporate accounts ?

Account Name	Account number	The resources available ?	Accounting Balance ?	Currency
PKOBP Branch 9 at ul. Novgorod 35/41 00-950 Warszawa				
Agreement to the account 00 1020 1055 0000 0000 0000 0000				
GOLD ACCOUNT CURRENT ACCOUNT	00 1020 1055 0000 0000 0000 0000	1 000,00	1 500,00	PLN
Summary under contract		1 000,00	1 500,00	PLN
PKO BP in Warsaw Branch 6 ul.Puławska 15, 00-975 Warsaw				
Agreement to the account 00 1020 1068 0000 0000 0000 0000				
CURRENT ACCOUNT SUPERKONTO revolving credit facility	00 1020 1068 0000 0000 0000 0000	14 456.76	1 456.76	PLN
Summary under contract		14 456.76	1 456.76	PLN
A summary of the accounts		14 456.76	1 456.76	PLN

Guide Demo Security Fees Interest rates Exchange rates BIC (Swift): BPKOPLPW © 2008 PKO Bank Polish

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12. Benchmarking Analysis with Domestic Competition

Balance of the Account

iPKO Client: Paul IPKO | Customer number: 12345678
Last login: successful 2008-08-16 8:24:57 | Failed 2008-04-16 11:10:35

Accounts Transactions Cards Funds Insurance Top-up Access Contact

→ Personal and business

- Investments**
- Details deposits
- New deposit
- Loans
- Account History
- Means unsettled
- Lifts

List of deposits ?

Name deposits	Date of next settlement percentage	Duration of	The resources available	Accounting Balance	Currency	?
PKO BP in Warsaw Branch 6 ul.Puławska 15, 00-975 Warsaw						
Agreement to the account 00 1020 1068 0000 0000 0000 0000						
CASH DEPOSITS TIMELY INDIVIDUAL CLIENT	2008-11-01	1 month	4 500.00	4 500.00	PLN	→ Change → Break
Summary under contract				4 500.00	PLN	

Guide Demo Security Fees Interest rates Exchange rates BIC (Swift): BPKOPLPW © 2008 PKO Bank Polish

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12. Benchmarking Analysis with Domestic Competition

Accounts Transactions Cards Funds Insurance Top-up Access Contact **iPKO** Log out

→ Personal and business
→ Investments
→ Loans
→ **Details of the loan**
→ Details of the proposal
→ Apply
→ Account History
→ Means unsettled
→ Lifts

Selected credit agreement ?

00102010680000000000000002 → Choose

Details of the loan ?

You can: → Repayment schedule

Branch	PKOBP Branch 9 in Warsaw ul. Nowogrod 35/41 00-950 Warszawa
The number of credit agreement	00102010680000000000000002
Type of credit	HOUSING LOAN MORTGAGE IN PLN
Accounting data	
Current interest rates	6.06%
The amount of credit granted	80 000.00 PLN
Crediting period	300 months
Date of next repayment of principal	2008-12-10
Date of next payment of interest	2008-12-10
Unpaid principal	80 000.00 PLN
Interest on unpaid	PLN 0.00
The amount of the next installment of capital	266.67 PLN
The amount of the next installment of the interest	PLN 730.52
Principal amount overdue	PLN 0.00
The amount of interest overdue	PLN 0.00

KUP ON-LINE

Choose

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Branches and Agencies

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12. Benchmarking Analysis with Domestic Competition

Account History

Accounts Transactions Cards Funds Insurance Top-up Access Contact **iPKO** Log out

→ Personal and business
→ Investments
→ Loans
→ **Account History**
→ Download extract
→ Means unsettled
→ Lifts

Account History ?

Search Criteria ?

Bill: 00 1020 1068 0000 0000 0000 0000 ?
Name: CURRENT ACCOUNT SUPERKONTO revolving credit facility
The resources available: 14 456.76 PLN
Daily limit: Lack

Type of transaction: All

Term: From 2008-09-17 To 2008-10-17

Amount: Min. Max.

WYSZUKAJ ▶

Sophisticated transactions ?

You can: Print All MS Excel ? Download ?

Posting Date	Date of operation	Type of transaction	Description of the transaction	Amount	Balance after transaction	
2008-10-17	2008-10-17	Transfer from account	No rach. przeciwtw. : 25 1020 5561 0000 1234 0000 1234 Data address. rach. przeciwtw. : MARIANNA KONARSKA Title: Account Funding	-1 848.24 PLN	1 456.76 PLN	Print Fax

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12. Benchmarking Analysis with Domestic Competition

iPKO Client: Paul IPKO | Customer number: 12345678
Last login: successful 2008-08-16 8:24:57 | Failed 2008-04-16 11:10:35

Mudou para o ecrã inteiro. Sair do modo de ecrã inteiro (F11)

Accounts Transactions **Cards** Funds Insurance Top-up Access Contact

Predefined recipients
Payments
Payments to Social Security
Payments to US
Standing orders
Direct debits
BILIX
A one-time transfer
Transfer between own accounts
Foreign exchange payment order

Pending Transactions ?

Date of Order	Date of execution	Description of the transaction	Amount
2005-10-16	2008-10-23	Transfer the normal bill considered: 00 1020 1752 0000 0000 0000 Name of recipient: MARIANNA KONARSKA Title: DEPARTURE	150,00 PLN

Rejected transactions ?

Date of Order	Date of execution	Description of the transaction	Amount
2008-09-14	2008-09-15	Transfer the normal bill considered: 00 1020 3408 0000 0000 0000 Income charged: 00 1020 1068 0000 0000 0000 Name of recipient: MIKE KONARSKA Title: DEPARTURE IN WINTER CAMP LANGUAGE	10 000,00 PLN

Transactions canceled ?

Date of Order	Date of execution	Description of the transaction	Amount
2008-09-10	2008-09-10	Transfer the normal bill considered: 00 1020 3408 0000 0000 0000 Income charged: 00 1020 1068 0000 0000 0000 Name of recipient: MIKE KONARSKA address: WARSAW Title: Account Funding Amount: 100,00 PLN Transfer executed by SORBNET: no	PLN 100,00

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12. Benchmarking Analysis with Domestic Competition

iPKO Client: Paul IPKO | Customer number: 12345678
Last login: successful 2008-08-16 8:24:57 | Failed 2008-04-16 11:10:35

Accounts Transactions **Cards** Funds Insurance Top-up Access Contact

→ Credit cards
→ Credit Card Details
→ Ongoing operations
→ Statement of operations
→ Repayment of debt

Credit cards ?

Card Number	Card Name	Cardholder	Credit limit	Available resources	Settlement day	Status
* 4561	Silver Credit Card VISA	PAUL IPKO	5000,00 PLN	1200,00 PLN	30th of each month	Active

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12. Benchmarking Analysis with Domestic Competition

iPKO Client: Paul IPKO | Customer number: 12345678
Last login: successful 2008-08-16 8:24:57 | Failed 2008-04-16 11:10:35

Accounts Transactions **Cards Funds Insurance** Top-up Access Contact

Investment funds

- New register
- How to start
- Registry Details
- Information Leaflets
- The values of
- Fees and commissions
- Banking OFE

Your orders pending execution.

Date and time of placing the order	Order Type	Details of the order
2008-10-15 10:01:22	Redemption	Fund PKO Balanced - fio Redemption specified number of units: 3.123
2008-10-15 9:11:22	Opening register	Fund PKO Shares - fio Amount: 100.00 PLN
2008-10-15 9:23:22	Conversion	With Registry: PKO Balanced - violets on the register: Stable Growth - fio Convert a certain number of units: 12.543

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A list of your records in open-end investment funds PKO supported through iPKO service.

To order a conversion to a new register should first open the corresponding register, and then make the conversion. Conversion is only available between registers A, and hepabts C between registers (register type defines the letter presented in the register number). It is not possible to convert between the registers A and C, except for the conversion from and to the Money Market Fund, the Fund Bonds and Long-Term Bond Fund Revenue Fund. It is also possible to transfer funds between registers open in the same fund.

Fund Name	Register number	Number of units	The current value of the unit	The value of units	
PKO Balanced - fio	12-23333322-1A-22	20.593	1064.90	21929.49	Acquisition Redemption

Summary of your records are supported through the service iPKO 21929.49

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12. Benchmarking Analysis with Domestic Competition

iPKO Client: Paul IPKO | Customer number: 12345678
Last login: successful 2008-08-16 8:24:57 | Failed 2008-04-16 11:10:35

Accounts Transactions Cards Funds **Insurance** Top-up Access Contact

Insurance

- The new policy
- Archive policies

Your insurance purchase order.

Currently do not have any insurance purchased through iPKO.

Take advantage of a wide range of insurance, the purchase of which can be done directly from the website.

The whole process will take you a maximum of a few minutes!

If the price conditions will suit you approve the transaction and already the next day you will be insured! Policy number can be found on the transfer form. Printed agreement do not you'll need.

Can you imagine a more convenient?

KUP ON-LINE

Choose

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12. Benchmarking Analysis with Domestic Competition

iPKO Client: Paul IPKO | Customer number: 12345678
Last login: successful 2008-08-16 8:24:57 | Failed 2008-04-16 11:10:35

Accounts Transactions Cards Funds Insurance **Top-up** Access Contact

Topping the phone.

Phone Number +48 [] required

Operator

simplus⁺
Era Yes Heyah SimPlus
sami swol POP ORANGE
PLAY

Topping the bill

00 1020 1055 0000 0000 0000 0000 ?
Name: GOLD ACCOUNT CURRENT ACCOUNT
The resources available: 1 000,00 PLN
Daily limit: None / None

Amount of credit [] Currency: PLN ?

☐ I do not buy the boost in the ordinary course of business, but I want to receive an invoice.
☐ Buy top-up as part of my business and I need an invoice.
☐ I do not need an invoice.

An invoice will be issued in electronic form and you will be made available for download the next day. You will be able to download it by selecting the link "Download" in the History of Top-up.

OK ANULUJ

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12. Benchmarking Analysis with Domestic Competition

iPKO Client: Paul IPKO | Customer number: 12345678
Last login: successful 2008-08-16 8:24:57 | Failed 2008-04-16 11:10:35

Accounts Transactions Cards Funds Insurance **Top-up** **Access** Contact

Access channels

Change your password online
TAN card
Personal data

Status	Number of wrong logins		Correct	Last login	Misleading
	Current	The maximum			
Telephone Service					
Active	0	3	2008-10-12 11:46:42	2008-10-10 16:44:60	→ Block
Internet service					
Active	0	3	2008-10-16 8:24:57	2008-04-16 11:10:35	→ Block
Self-service terminal					
No access	0	3		Not logged in on the site	→ Activate

Eligibility for customer contracts ?

Name, address, customer number	Type of relationship	Telephone Service	Internet service	Self-service terminal	Daily limit ?
PKO BP Branch 9 at ul. Nowgorod 35/41 00-950 Warszawa					
Agreement to the account 00 1020 1055 0000 0000 0000 0000					
PAUL IPKO UL. BANK 35 00-112 WARSZAWA POL 12345678	Owner	Active full	Active full	No access	Lack
PKO BP in Warsaw Branch 6 ul. Puławska 15, 00-975 Warsaw					
Agreement to the account 00 1020 1068 0000 0000 0000 0000					
PAUL IPKO UL. BANK 35 00-112 WARSZAWA POL 12345678	Owner	Active full	Active full	No access	Lack
PAULINA KONARSKA UL. BANK 35 00-112 WARSZAWA POL 87654321	Proxy	Active full	Active full	No access	Lack

Guide Demo Security Fees Interest rates Exchange rates BIC (Swift): BPKOPLPW © 2008 PKO Bank Polish

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12. Benchmarking Analysis with Domestic Competition



The 2nd biggest bank in Poland is Bank Pekao. As PKO, Pekao doesn't have a PFM per-se (only a Transaction History feature with no categorization of expenses but no Savings Plan, Budgeting features, etc.). The following are screenshots of the Main Page.

Bank Pekao's Pekao24 platform is divided into 8 major categories

- **Money Transfers** → the client can comprehensively manage money transfers, both in PLN and foreign currencies; gives info on current payment status, future payments list and list of operations to be authorized
- **Deposits** → possibility to set up a now standard fixed-term deposit or E-LOK@TA (pesquisar o que e) deposit; gives access to deposit account history
- **Investments** → buy investment fund units; gives access to the history of operations and orders related to the investment funds
- **Cards** → list of credit card and debit card accounts, access to details of a card, operations history, etc.
- **Loans** → A list of the loans incurred in, when the next payment is due and the amount left to pay
- **Services** → A list of miscellaneous bills, from energy to phone expenses
- **Applications**
- **Offer for you**

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12. Benchmarking Analysis with Domestic Competition

HOME PAGE 1

Pekao24 - demo version
PeoPay - demo version
Brokerage Services - demo version

HOME
MONEY TRANSFERS
DEPOSITS
INVESTMENTS
CARDS
LOANS
SERVICES
APPLICATIONS
OFFER FOR YOU

KATARZYNA NET
LOGOUT

Customer number: 0000123456 | Last successful login: 28/10/2010 20:35

Antivirus software

Security

Download

- Services functions list
- Pekao24 guidebook
- Regulations and documents
- Security bulletins
- Mobile application –

Help

Get acquainted with the main topics of the help:

- Home page personalisation
- My shortcuts
- Event register

Home page

Current presented information about payment cards may not reflect the actual situation. We apologize for the inconvenience. Please try again later.

MY HOME PAGE
PERSONALIZE VIEW

Assets and liabilities balance	
ASSETS SUM PLN:	17.363,38 PLN
LIABILITIES SUM PLN:	12.893,11 PLN
BALANCE PLN:	4.470,27 PLN
ASSETS SUM USD:	7.941,96 USD
BALANCE USD:	7.941,96 USD
ASSETS SUM EUR:	1.999,02 EUR
BALANCE EUR:	1.999,02 EUR

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12. Benchmarking Analysis with Domestic Competition

HOME PAGE 2

ASSETS			
Bills			
Type of account / Own name	Account number	Balance	
EUROKONTO PREMIUM PLUS	15 1240 1112 1111 0000 0000 1001	494,11 PLN	OPERATIONS
RACHUNEK BIEŻĄCY	85 1240 1112 1111 0000 0000 1002	1.647,00 PLN	OPERATIONS
EUROKONTO WALUTOWE	10 1240 1112 1978 0000 0000 1003	1.999,02 EUR	OPERATIONS
SUM:		2.141,11 PLN	
SUM:		1.999,02 EUR	
Investments			
Type of investment / Own name	Deposit number	Balance	
E-LOKATA 60 DNI	40 1240 1112 2111 0010 0050 0604	1.000,00 PLN	OPERATIONS
E-LOKATA 10 DNI	63 1240 1112 2111 0010 0050 0675	1.501,11 PLN	OPERATIONS
LOKATA STANDARDOWA	90 1240 1112 2111 0010 0050 0965	500,00 PLN	OPERATIONS
SUM:		3.001,11 PLN	
Investment funds			
Pioneer Pekao TFI S.A.			
Fund name	Account number	Number of units	Wartość jednostek
Dynamic Europe Portfolio	***3000232454		
↳ PIONEER MONEY MARKET INVESTMENT FUND (OPEN-END)	0063000232454	34,097	4.998,28 PLN
↳ PIONEER BOND PLUS INVESTMENT FUND (OPEN-END)	0023000232454	100,051	3.990,03 PLN
↳ PIONEER POLISH EQUITIES INVESTMENT FUND (OPEN-END)	0033000232454	89,675	2.939,55 PLN
↳ PGF SOIF - PIONEER EASTERN EUROPEAN EQUITY INVESTMENT FUND	2413000232454	45,123	293,30 PLN
SUM:			12.221,16 PLN

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12. Benchmarking Analysis with Domestic Competition

HOME PAGE 3

LOANS AND CARDS					
Cards					
Card Type / Own name	Card number	Funds available [?]			
Rachunek kart Visa Classic USD	07 1240 1112 1787 0000 1111 1111	7.941,96 USD	OPERATIONS		
↳ VISA Classic USD	4063*****1392	7.941,96 USD	OPERATIONS		
Rachunek kart kredytowych	02 1240 1234 5678 6603 0001 8446	2.248,25 PLN	OPERATIONS		
↳ Pekao MasterCard Credit Gold	4213*****3587	2.248,25 PLN	OPERATIONS		
Loans					
Loan type / Own name	Account number	Date of next payment	Amount outstanding	Currency	
POŻYCZKA EKSPRESOWA	26 1240 1112 3111 0000 0000 1004	25/04/2010	10.141,36	PLN	

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12. Benchmarking Analysis with Domestic Competition

TRANSACTIONS' HISTORY – Deposits tab

Customer number: 0000123456 | Last successful login: 28/10/2010 20:35

Home page > Deposits > Operation history

OPERATIONS HISTORY

CHOICE OF INVESTMENTS

Account number: E-LOKATA 60 DNI 40 1240 1112 2111 0010 0050 0004 PLN

Deposit amount: 1,000.00 PLN | The value of the current deposit: 1,000.00 PLN | Book value: - PLN

TRANSACTIONS

Transaction query

From date: 01 01 2015 | To date: 12 02 2015

The amount of: | To sum: | Transaction type: ALL

EXPORT TO TEXT FILE | SEARCH

Date	Type of operation	Amount	Currency
07/06/2009	ZALICZKA NA POCZET PODATKU	-1.00	PLN
07/06/2009	ODSETKI NAUCZONE	7.04	PLN
28/05/2009	ZALICZKA NA POCZET PODATKU	-1.00	PLN
28/05/2009	ODSETKI NAUCZONE	7.04	PLN
18/05/2009	ZALICZKA NA POCZET PODATKU	-1.00	PLN
18/05/2009	ODSETKI NAUCZONE	7.04	PLN
08/05/2009	ZALICZKA NA POCZET PODATKU	-2.00	PLN
08/05/2009	ODSETKI NAUCZONE	7.94	PLN

DOWNLOAD PDF

For every other subsequent tab, the Operations History list follows the same pattern as shown for the 1st two tabs of the website

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12. Benchmarking Analysis with Domestic Competition

The 3rd largest bank is BRE Bank, soon to be rebranded and transformed into mBank. mBank is a more advanced platform than the two previously presented ones.

On the history of transactions you may see:
Transactions type (card, ATM, transfer) and category. Also in case of some transaction you are requested to confirm if applied category is correct (OK button)

You may search by description, category, tag or amount

Also you may see list of all transactions for which category was not applied

mBank

Historia

Szukaj w historii: wpisz opis, kategorię, tag lub kwotę

Typ	Data	Opis	Kategoria	Kwota
PRZELEW	14.09.2014	PRZELEW WŁASNY	Przelew własny	306.00 PLN
VETURLO	14.09.2014	VETURLO VET000870232	Bez kategorii	-10.00 PLN
PRZELEW	13.09.2014	PRZELEW REGULARNE OSZCZĘ...	Regularne oszczędzanie	-1.80 PLN
PRZELEW	13.09.2014	PRZELEW REGULARNE OSZCZĘ...	Regularne oszczędzanie	-5.00 PLN
mTransfer	13.09.2014	mTransfer	TV, internet, telefon	-49.99 PLN
MAXX	13.09.2014	MAXX SPORT SKLEP	Sport i hobby	-29.00 PLN
ADOBE	12.09.2014	ADOBE SYSTEMS SOFTWARE	Multimedia, książki i p...	-647.01 PLN
KAWIARNIA	12.09.2014	KAWIARNIA OTWARTA	Jedzenie poza domem	-18.00 PLN
PRZELEW	12.09.2014	PRZELEW REGULARNE OSZCZĘ...	Regularne oszczędzanie	-35.00 PLN
PRZELEW	12.09.2014	PRZELEW REGULARNE OSZCZĘ...	Regularne oszczędzanie	-5.00 PLN
PRZELEW	12.09.2014	PRZELEW REGULARNE OSZCZĘ...	Regularne oszczędzanie	-2.10 PLN
PRZELEW	12.09.2014	PRZELEW REGULARNE OSZCZĘ...	Regularne oszczędzanie	-11.90 PLN
mTransfer	12.09.2014	mTransfer	TV, internet, telefon	-119.00 PLN

Chcesz wiedzieć na co wydajesz i na czym możesz zaoszczędzić?

W nowym serwisie każda transakcja ma automatycznie przypisaną kategorię

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12. Benchmarking Analysis with Domestic Competition

You may select many products: accounts and cards

Also you may select period

Promoting categorization of transactions

M 79

12. Benchmarking Analysis with Domestic Competition

Possibility to edit transaction and change category on the list (one transaction or many at the same time)

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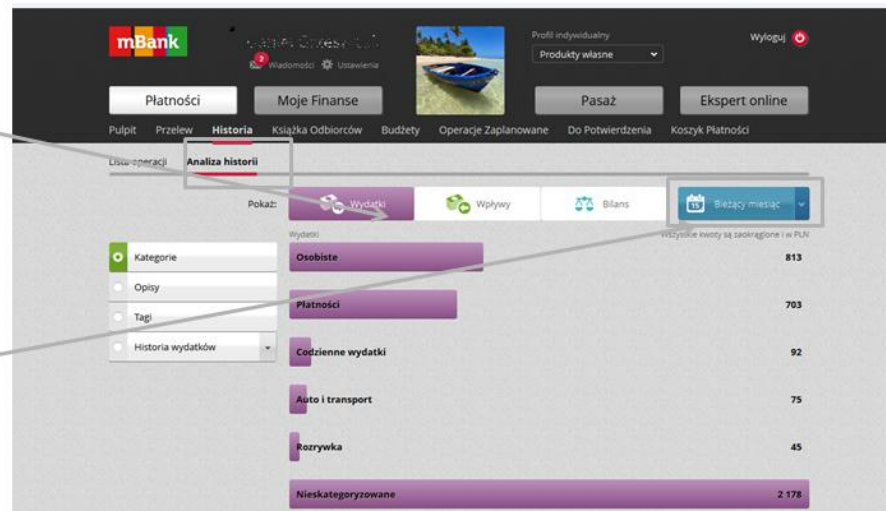
12. Benchmarking Analysis with Domestic Competition

On the history of transactions in History analysis tab you may see:

Spending
Inflows
Cash flow

Spending and Inflows may be seen by:
categories, descriptions, tags, history of spendings

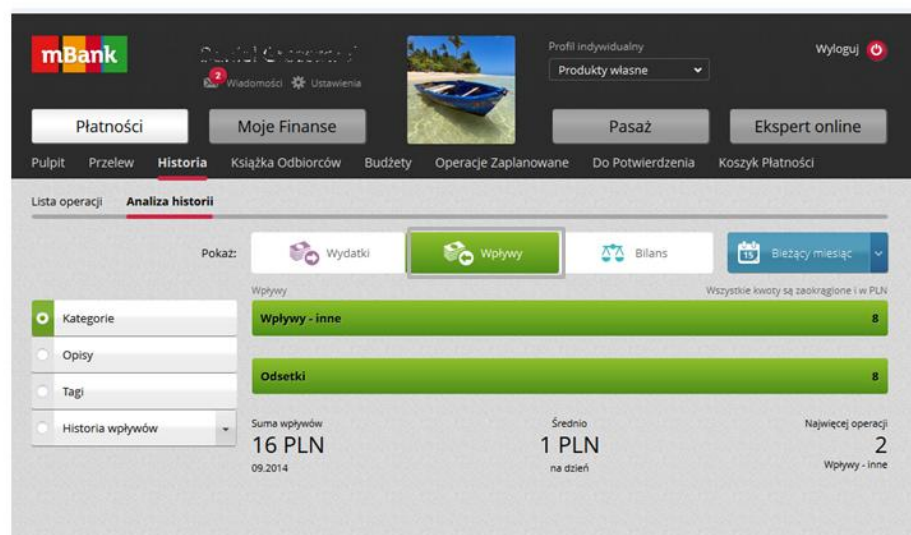
Also you may select period



12. Benchmarking Analysis with Domestic Competition

Inflows

Inflows may be seen by:
categories, descriptions, tags, history of spendings

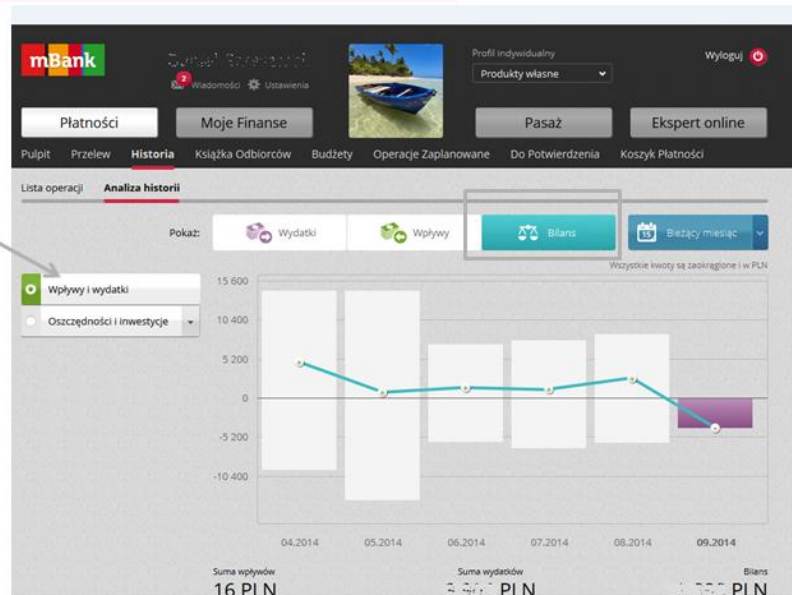


12. Benchmarking Analysis with Domestic Competition

Cash flow

You may see:

- Inflows, spendings
- Savings, Investments

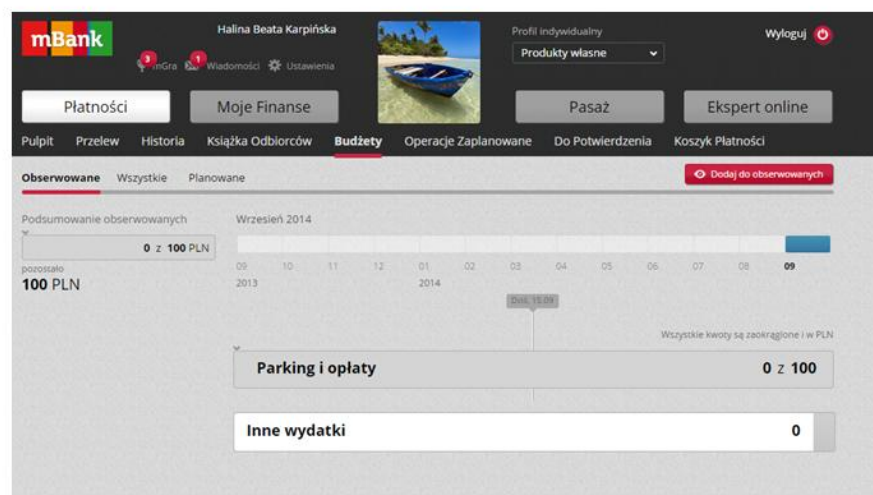


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12. Benchmarking Analysis with Domestic Competition

In option Payments
there is option for
Budget

You can create budget
per separate category...



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12. Benchmarking Analysis with Domestic Competition

..or make a plan
for all
categories

Wykonanie	Budżet	Pozostało
Wpływy	0,00	0,00
Wydutki	0,00	300,00
Auto i transport	0,00	300,00
Codzienne wydatki	0,00	0,00
Dom	0,00	0,00
Dzieci	0,00	0,00
Firmowe	0,00	0,00
Niekategoryzowane	0,00	0,00
Osobiste	0,00	0,00
Płatności	0,00	0,00
Rozrywka	0,00	0,00
Bilans	0,00	-300,00
Oszczędności i inwestycje	0,00	0,00
Pozostało	0,00	-300,00

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12. Benchmarking Analysis with Domestic Competition

Interesting option of promoting
mOkazje.
In case of some transactions on
list appears an icon, which after
clicking on it displays okazje
connected with this operation.

Typ	Data	Opis	Kategoria	Wartość
Wypłata	14.09.2014	WETURLO VET000870232	Bez kategorii	-10,00 PLN
Przelew	13.09.2014	PRZELEW REGULARNE OSZCZ...	Regularne oszczędzanie	-1,00 PLN
Przelew	13.09.2014	PRZELEW REGULARNE OSZCZ...	Regularne oszczędzanie	-5,00 PLN
mTransfer	13.09.2014	mTransfer	TV, internet, telefon	-49,99 PLN
Przelew	13.09.2014	MAX SPORT SLEEP	Sport i hobby	-29,00 PLN
Przelew	12.09.2014	ADORE SYSTEMS SOFTWARE	Multimedia, książki i p...	-647,01 PLN
Kasowa	12.09.2014	KASOWA OTWARTA	Jedzenie poza domem	-18,00 PLN
Przelew	12.09.2014	PRZELEW REGULARNE OSZCZ...	Regularne oszczędzanie	-35,00 PLN
Przelew	12.09.2014	PRZELEW REGULARNE OSZCZ...	Regularne oszczędzanie	-5,00 PLN
Przelew	12.09.2014	PRZELEW REGULARNE OSZCZ...	Regularne oszczędzanie	-2,10 PLN
Przelew	12.09.2014	PRZELEW REGULARNE OSZCZ...	Regularne oszczędzanie	-11,00 PLN
mTransfer	12.09.2014	mTransfer	TV, internet, telefon	-119,00 PLN

13.09.2014 mTransfer TV, internet, telefon -49,99 PLN

Zyskaj 100 PLN przy zamówieniu platformy nc+ dla siebie i najbliższych

Warunki otrzymania zwrotu:

1. Aktywuj ofertę - kliknij przycisk **Wybierz** na dole
2. **Uzupełnij formularz zgłoszeniowy** na www.ncplus.pl/mbank
3. **Podpisz umowę** dostarczoną przez kuriera
4. **Przelej 1 PLN** z mBanku na numer konta widniejący na umowie, dostarczonej przez kuriera
5. **100 PLN** otrzymasz w ciągu 60 dni od daty dokonania przelewu na kwotę 1 PLN
6. Z oferty możesz skorzystać **1 raz**
7. Oferta nie obowiązuje w sieci sprzedaży nc+ Partner: ITI Neovision S.A.

Formularz zgłoszeniowy

Wybierz

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12. Benchmarking Analysis with Domestic Competition

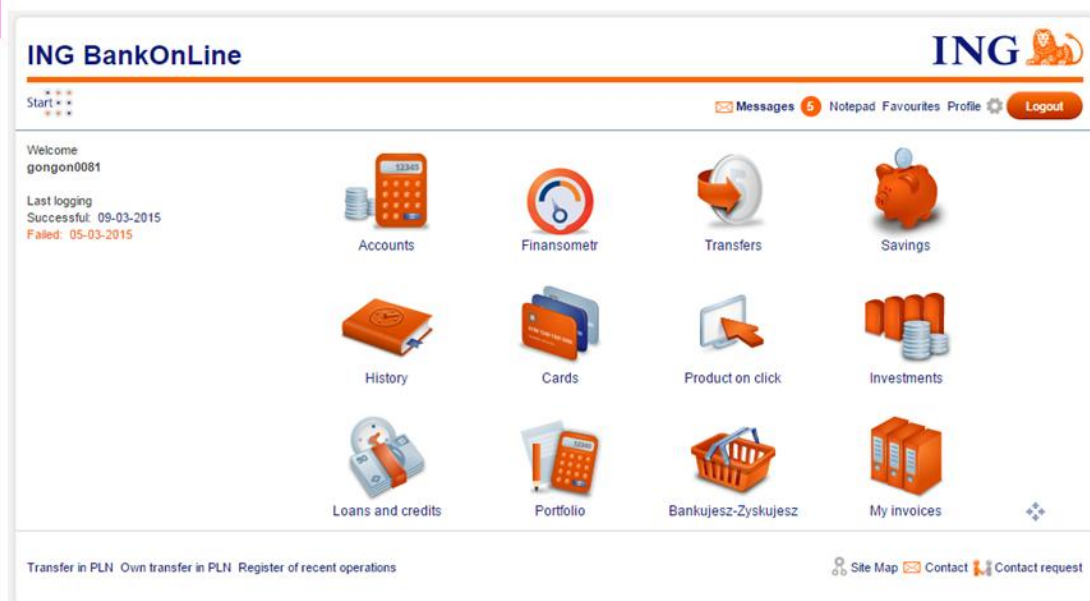
The 4th biggest in the domestic market is ING. ING stands as the 2nd most advanced homebanking platform in Poland (after Milenet), according to the hereby presented analysis. The homebanking page is divided in the following categories:

Accounts – overview of the accounts (name, number & balance), option to open a new account, order a card for an existing account
Finansometr – Displays Last Transactions (and all Transactions overtime) and Revenues & Expenses, as per category (or tag) in a list of graphic. Interesting feature
Transfers – Enables the user to make online transfers of various kinds
Savings – Enables user to open a new savings account with the possibility of attaching a Saving Goal or a selected transfer percentage to savings. Alongside Finansometr, this is ING's most interesting feature.
History – History of Operations
Cards – Enables user to assign to the ING Digital Wallet, cancel, order, activate or insure cards.
Products on Click – Enables the user to subscribe to a variety of different products
Investments – Enables the user to engage in Investment Funds provided by ING
Loans and Credits – Apply for Loans & Credits; possibility of scheduling a meeting with a consultant
Portfolio – Displays the portfolio of accounts the user has
Bankujesz-Zyskujesz
My Invoices

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12. Benchmarking Analysis with Domestic Competition

The just before-shown list is represented in ING's home page.



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12. Benchmarking Analysis with Domestic Competition

This time around, we have ING's Accounts tab.

The screenshot shows the ING BankOnLine interface. The top navigation bar includes the ING logo, a row of icons for various services, and links for Messages, Notepad, Favourites, Profile, and Logout. The left sidebar has a menu with 'Accounts' selected, and sub-options: 'Open new account', 'Order card for account', and 'Insure card for account'. The main content area is titled 'Accounts' and displays 'PLN Accounts'. A table lists existing accounts:

Name	Account	Available balance
KONTO Direct KONTO Direct	51 1050 1054 1000 0092 0736 6189	0,00 PLN option ▼

Below the table, it states: 'Currency accounts: No accounts of this type.' and 'Accounts for prepaid cards: No accounts of this type.' At the bottom, there are links for 'Transfer in PLN', 'Own transfer in PLN', and 'Register of recent operations', along with 'Site Map', 'Contact', and 'Contact request'.

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12. Benchmarking Analysis with Domestic Competition

This time around, we have ING's Accounts tab.

The screenshot shows the ING BankOnLine interface with the 'Open new account' option selected in the left sidebar. The main content area is titled 'Open new account' and prompts the user to 'Select the type of an account'. A dropdown menu is open, showing the following options:

- Choose from the list
- Choose from the list
- KONTO Direct
- KONTO Komfort
- ROR w EUR
- ROR w USD
- ROR w GBP

There is a link 'Learn more about account >>' next to the dropdown. The bottom of the page features the same navigation links as the previous screenshot: 'Transfer in PLN', 'Own transfer in PLN', 'Register of recent operations', 'Site Map', 'Contact', and 'Contact request'.

M 90

12. Benchmarking Analysis with Domestic Competition

This time around, we have ING's Accounts tab.

The screenshot shows the 'Order card for account' page on the ING BankOnline portal. The left sidebar contains a menu with 'Accounts', 'Open new account', 'Order card for account' (highlighted), and 'Insure card for account'. The main content area is titled 'Order card for account' and includes a dropdown to 'Select the type of card which you want to order'. The account details are: Account: KONTO Direct, 0,00 PLN; KONTA Direct 51 1050 1054 1000 0092 0736 6189. The card type is 'KARTA VISA NFC'. There is an option for 'Insurance card'. The account holder is 'GONSALVES GONCALO' and the card user is 'GONSALVES GONCALO'. The mobile network operator is 'orange'. A field for 'Mobile phone given to card order' is set to '+48'. Below this is a 'Declarations and information' section with two checkboxes: 'I declare that I received prior to entering into a contract with the Internet banking system and I am familiar with: Model Agreement, Bylaw, Table of Fees and Commissions for Individual Clients and undertake to comply with them.' and 'I agree to the verify my phone and SIM card with the operator'. At the bottom are 'Accept' and 'Cancel' buttons. The footer contains links for 'Transfer in PLN', 'Own transfer in PLN', 'Register of recent operations', 'Site Map', 'Contact', and 'Contact request'.

M 91

12. Benchmarking Analysis with Domestic Competition

Still in the Accounts tab, there is the option to Insure the card referent to an account against unauthorized use and cash taken from the ATM

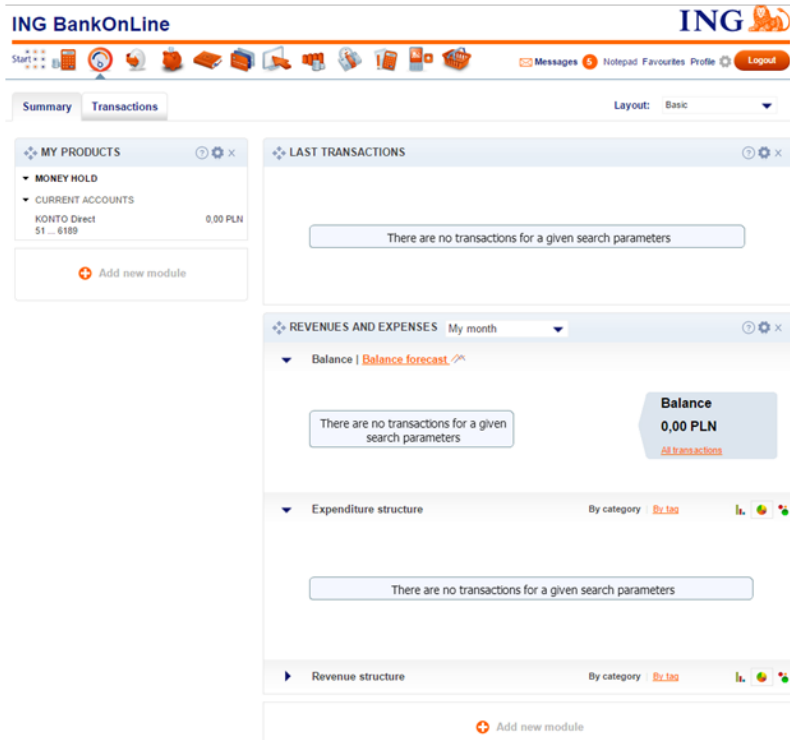
The screenshot shows the 'Insure card for account' page on the ING BankOnline portal. The left sidebar contains a menu with 'Accounts', 'Open new account', 'Order card for account', and 'Insure card for account' (highlighted). The main content area is titled 'Insure card for account' and includes a dropdown to 'Select the card which you want to insure'. The card details are: Card: VISA zblżeniowa 4246 7742; Account: KONTA Direct 51 1050 1054 1000 0092 0736 6189. Below this is a 'Declarations and information' section with a checkbox: 'I state that before signing up for insurance I have acquainted with contents of Terms and Conditions, Participation statement, Table of Fees and Commissions received by internet banking system.' At the bottom are 'Next' and 'Cancel' buttons. The footer contains links for 'Transfer in PLN', 'Own transfer in PLN', 'Register of recent operations', 'Site Map', 'Contact', and 'Contact request'.

M 92

12. Benchmarking Analysis with Domestic Competition

And now, ING's Finansometr. Finansometr's function is to display a quick overview of the last movements in the user's accounts, thus giving an updated idea of the accounts' financial health at the moment.

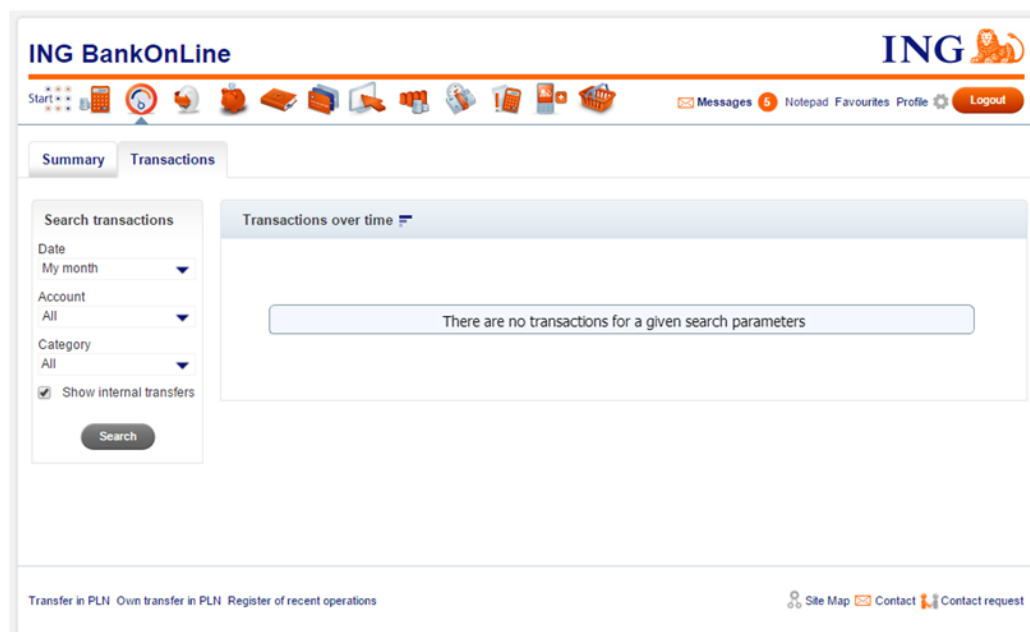
The 1st tab is named Summary.



M 93

12. Benchmarking Analysis with Domestic Competition

Still in ING's Finansometr, the 2nd tab is named Transactions.



M 94

12. Benchmarking Analysis with Domestic Competition

Transfers tab. This page lets the user carry out transfers of many capacities and of many types.

The screenshot shows the 'Transfers' tab in the ING BankOnline interface. The left sidebar contains a menu with options: 'Any transfer' (selected), 'Own transfer', 'New top-up', 'Transfer to Tax Office/Social Security Office', 'Other transfers', 'Transfer packages', 'Constant orders', 'Direct Debit', 'My invoices', and 'Patterns'. The main content area is titled 'Transfer in PLN' and 'European transfer/Currency order'. It includes a 'Fill the bank transfer details' section with the following fields: 'From account' (KONTO Direct 0,00 PLN, KONTO Direct 51 1050 1054 1000 0092 0736 6189), 'To account' (with a 'Search recipient' button), 'Recipient's name and address' (with a 'Remain 140 characters' note), 'Title' (with a 'Remain 140 characters' note), 'Date of transfer' (05-03-2015), 'Amount' (with a 'PLN' currency selector), and 'Type of transfer' (Standard, Express ELIXIR, and SORBNET). At the bottom, there are buttons for 'Send transfer', 'Cancel', 'Save transfer', and 'Save recipient'. The footer includes links for 'Site Map', 'Contact', and 'Contact request'.

M 95

12. Benchmarking Analysis with Domestic Competition

The **Savings** tab gives the user the opportunity to open a new deposit or a new savings account. Plus, the user can use the tool Smart Saver or Dream Saver to actually save money overtime.

The screenshot shows the 'Savings' tab in the ING BankOnline interface. The left sidebar contains a menu with options: 'Savings' (selected), 'Open new deposit', 'Open savings account', 'Open Smart Saver', 'Open Dream Saver', 'Open the Individual Pension Security Account', and 'Open the Individual Pension Security Account'. The main content area is titled 'Open new deposit' and includes a 'Select the type of investment which you want to open' section with the following fields: 'Currency' (PLN), 'Type of Deposit' (with a 'Deposit Description' button), 'From account' (KONTO Direct 0,00 PLN, KONTO Direct 51 1050 1054 1000 0092 0736 6189), 'Amount of Deposit', and 'Please select account'. Below this is a 'Declarations and information' section with a checkbox for 'I agree to have the funds in the account frozen in the amount corresponding to the amount of the Deposit as set out in the Application. Until the funds have been transferred to the Deposit, they will continue to bear the interest rate applicable to the account from which they are to be transferred.' and a checkbox for 'I declare that I received prior to entering into a contract with the Internet banking system and I am familiar with Model agreement, General Terms and Conditions, Table of Fees and Commissions for Individual Clients and undertake to comply with them.' At the bottom, there are buttons for 'Next' and 'Cancel'. The footer includes links for 'Site Map', 'Contact', and 'Contact request'.

M 96

12. Benchmarking Analysis with Domestic Competition

The **Smart Saver** tool enables the user to save everytime there's a payment by credit card or bank transfer. Indeed, the user sets a certain percentage of every payment by credit card or bank transfer that should be allocated to a personal savings account that has the money growing at 1,50%/month for amount deposited in excess of 5000 zł and at 3,00%/month for amount deposited in excess of roughly 20 000 zł.

ING BankOnLine

Start saving regularly now with Smart Saver

Choose a way of saving:

☒ Rounding transaction amount ?

to 5 PLN

☐ The percentage of the transaction amount ?

1 %

Scroll to the account from which you want to put:

KONTO Direct 0,00 PLN

KONTO Direct 51 1050 1054 1000 0092 0736 6189

Statements and information

There will be a dedicated savings account set up for the Smart Saver programme. You will be advised of non-execution of an automatic transaction in Smart Saver due to lack of funds in the account electronically through the Messages tab. The Smart Saver programme will also cover the overdraft.

☐ I certify that I received before the contract is concluded through the Internet banking system and similar with: [The Agreement model](#), [Bylaws of products for Individual Clients](#), [Table of Fees and Commissions](#) and undertake to abide by them.

By sending this application, I consent to electronic conclusion of the Agreement through the internet banking system on terms and conditions set out in the specimens provided. It satisfies the written form requirement under the Electronic Banking Agreement.

Create Cancel

Transfer in PLN Own transfer in PLN Register of recent operations

Site Map Contact Contact request

M 97

12. Benchmarking Analysis with Domestic Competition

Another of ING's Saving tools is **Dream Saver**. This function enables the user to **define a Saving Goal** (categorizing it and defining a Target Amount and Saving Time). On this basis, ING will calculate the monthly deposit needed to achieve the goal in hands.

ING BankOnLine

Define your savings with Dream Saver

I save for: Select

Goal photo: Add a picture

Savings Simulation

I know how much I want to save:

☒ Yes ?

☐ No

Target amount: PLN

Saving time: DD-MM-YYYY

Recalculate

Monthly deposit:

0 PLN

☐ Set up a standing order

Select this option if you want us to make your monthly deposits.

☐ Enable notifications

Notifies of goal accomplishment progress and remaining to make the outstanding declared deposits.

Representations and Details

There will be a dedicated savings account set up for the Smart Saver programme.

I declare monthly deposits of:

☐ I represent that prior to concluding the Agreement I have been provided through the internet banking system with and have familiarized myself with: [model agreement](#), [agreements](#), [table of Fees](#) and that I undertake to observe the same.

By sending this application, I consent to electronic conclusion of the Savings Account agreement through the internet banking system on terms and conditions set out in the specimens provided. It satisfies the written form requirement under the Electronic Banking Agreement.

Set up Cancel

M 98

12. Benchmarking Analysis with Domestic Competition

This last section of the Savings tab lets the user create an Individual Retirement Account Security

ING BankOnline

Start + Messages 10 Notebook Favorites Profile Log out

Savings

- Open new deposit
- Open savings account
- Open Smart Saver
- Open Dream Saver
- Open the Individual Pension Security Account**

Open the Individual Pension Security Account

Saving additional funds for retirement with IPSA

☒ I do not hold IPISA with another financial institution [Learn more >>](#)

☐ I do hold IPISA with another financial institution

Savings Simulation

Saving with IPISA for 41 years, 11 months, 17 days you may not only save, but also enjoy a tax relief

Accumulate funds	Tax relief
708 490,56 PLN	195 232,00 PLN

[Check how we estimated it](#)

IPSA disposal in case of death (beneficiaries)

☐ Is used to define beneficiaries

Declarations and information

☐ I represent that I do not accumulate funds in the Individual Pension Security Account (IPSA) with another financial institution. I affirm that I have been advised of criminal liability for misrepresentation, i.e. should I state untrue facts or conceal the truth, I may be subject to the criminal liability under Article 233 of the Criminal Code Act of 09 June 1997.

☐ I represent that I have become familiar with provisions of [Model agreement](#) and [binding Bylaw](#) and [Communication](#) and [Table of Fees and Commissions for Individual Clients](#). Sending this request I agree to the contract in electronic form using the Internet banking system under the terms of the patterns supplied to me. Under the terms of the electronic banking agreement meets the requirements of the writing.

[Create](#) [Cancel](#)

Transfer in PLN Own transfer in PLN Register of recent operations

[Site Map](#) [Contact](#) [Contact request](#)

M 99

12. Benchmarking Analysis with Domestic Competition

History of Operations.

ING BankOnline

Start + Messages 10 Notebook Favorites Profile Log out

History of Operations

History of Operations

Bit:

Direct ACCOUNT 51 1050 1054 1000 0092 0736 6189

[Search](#) [Advanced Search](#)

No transactions that meet the criteria.

Did you know that ...

The free app for smartphones or tablets you a quick way to check your transaction history, wherever you are and whenever you want? [Details](#)

New Transfer in PLN Transfer equity in PLN A record of the last operation

[Your proposals](#) [Site Map](#) [Write to us](#) [Make an appointment with an advisor](#)

M 100

12. Benchmarking Analysis with Domestic Competition

The following is the Moje Finanse section, a simple dashboard which resumes the user's cards, accounts and programs.

ING BankOnLine

Start + ING Messages 49 Notebook Favorites Profile Log out

PLN accounts

Name	Number	Balance available ?
Direct ACCOUNT ACCOUNT Direct	51 1050 1054 1000 0092 0736 6189	PLN 0.00 Options ▼

Credit cards

Name	Card Number	Cardholder	Status
VISA proximity	4246 ... 7742	Goncalo Goncalves	Inactive ? Options ▼

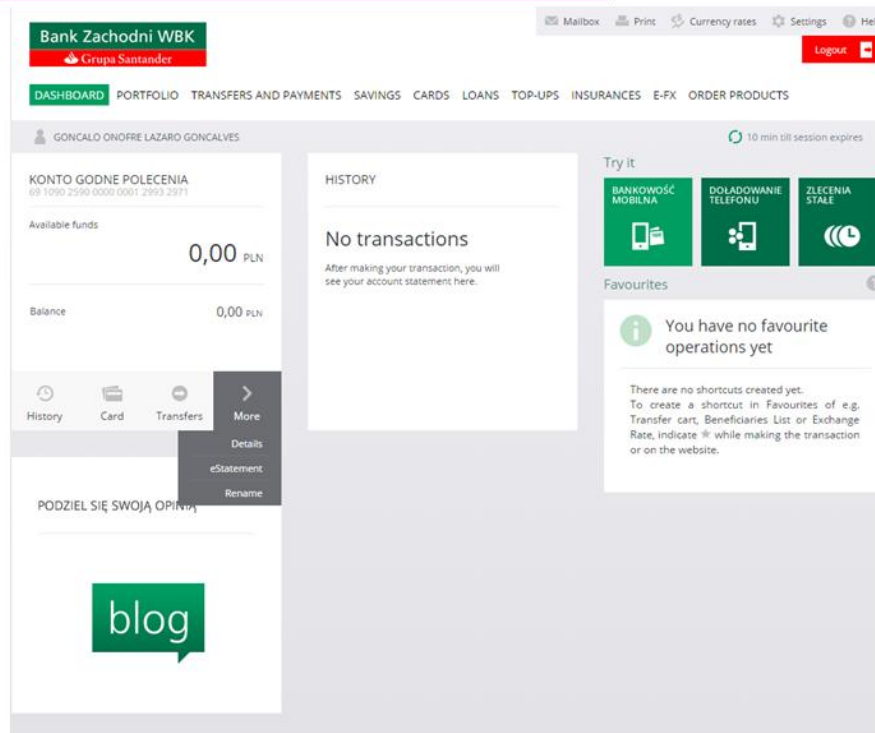
Foreign currency accounts
Accounts for prepaid cards
Savings accounts
Retirement Accounts
Savings Programs
Investments
Investment Funds
Brokerage account at ING Securities
Structured Products
Loans and advances
Credit cards
Prepaid cards

12. Benchmarking Analysis with Domestic Competition

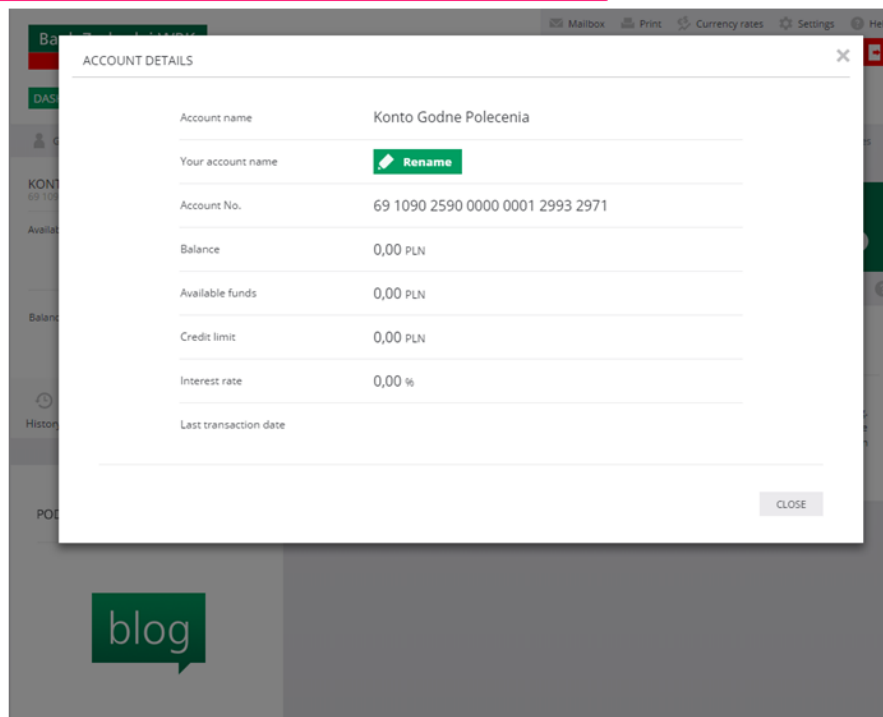
Next we have Bank Zachodni WBK, divided into the following tabs:

Dashboard – A display of Current Balance and Transactions
Portfolio
Transfers and Payments
Savings
Cards
Loans
Top-ups
Insurances
E-FX
Order Products

12. Benchmarking Analysis with Domestic Competition



12. Benchmarking Analysis with Domestic Competition



12. Benchmarking Analysis with Domestic Competition

DASHBOARD **PORTFOLIO** TRANSFERS AND PAYMENTS SAVINGS CARDS LOANS TOP-UPS INSURANCES E-FX ORDER PRODUCTS

GONCALO ONOFRE LAZARO GONCALVES Pracujesz w trybie pełnoekranowym. Zamknij pełny ekran (F11) 9 min till session expires

Summary

Savings	Liabilities	Total	Actions
0,00 PLN	0,00 PLN	0,00 PLN	

Accounts

Check our accounts offer

Name	Available funds	Balance	Actions
Konto Godne Polecenia 69 1090 2590 0000 0001 2993 2971	0,00 PLN	0,00 PLN	History Details More
		0,00 PLN	

Credit cards

Check out credit cards offer

Savings

How can you save through internet

Investment Program In Plus BZ WBK

Invest "by Click"

Get the list of policies

Limits and counters

Login date and time	Used transfer limit	Used cost free smsCodes	Actions
2015-01-28 14:47:42 successful	0,00 PLN with smsCode 0,00 PLN without smsCode 0,00 PLN any account in BZWBK24 mobile	0	More

Loans

Apply for cash loan

12. Benchmarking Analysis with Domestic Competition

Bank Zachodni WBK Grupa Santander

DASHBOARD PORTFOLIO **TRANSFERS AND PAYMENTS** SAVINGS CARDS LOANS TOP-UPS INSURANCES E-FX ORDER PRODUCTS

GONCALO ONOFRE LAZARO GONCALVES 8 min till session expires

TRANSFERS IN PLN

To a 3rd party's a/c
To own account
to a mobile phone
Telephone top-up
ZUS
Tax
ATM withdrawal
Standing orders

F/X TRANSFERS

SWIFT transfer
To own account
To account in BZ WBK

UNRELEASED ORDERS

List of orders
Import of transfers
Browse imports

PAYMENT HISTORY

Transfers
Mobile payments

BENEFICIARIES AND PAYERS

Beneficiaries
Browse imports
List of ZUS and tax
Payers
Phone numbers

E-INVOICES

New application
Applications and agreements list
E-invoices list

PLN transfer to the 3rd account

Add to Favourites

1 Data 2 Confirmation 3 End

YOUR ACCOUNT

From account Konto Godne Polecenia 69 1090 2590 0000 0001 2993 2971 0,00 PLN

BENEFICIARY DATA

Beneficiary

To account

Address (optional field) street, zip code, city

TRANSFER DATA

Transfer type ☒ Elvir - the payments reach the beneficiary's account at the latest on the next working day
☐ Express Elvir - the payments reach the beneficiary's account in a few minutes

Express ELXIR accessibility chart

Amount PLN

Description

Execution date (optional field)

NEXT

12. Benchmarking Analysis with Domestic Competition

Bank Zachodni WBK
Grupa Santander

Mailbox Print Currency rates Settings Help

Logout

DASHBOARD PORTFOLIO TRANSFERS AND PAYMENTS SAVINGS CARDS LOANS TOP-UPS INSURANCES E-FX ORDER PRODUCTS

GONCALO ONOFRE LAZARO GONCALVES 10 min till session expires

DEPOSITS
Opening of a deposit account

SAVING ACCOUNT
Opening of an account

ARKA
Opening of a register/subregister
Orders review
Customer Knowledge and Experience Test

Deposits Check deposit offer

Savings accounts Open savings account

Arka accounts Invest in Arka funds

IKE accounts Invest in Arka funds

Investment Program In Plus BZ WBK Invest "by Click"

Get the list of policies

M 107

12. Benchmarking Analysis with Domestic Competition

Bank Zachodni WBK
Grupa Santander

Mailbox Print Currency rates Settings Help

Logout

DASHBOARD PORTFOLIO TRANSFERS AND PAYMENTS SAVINGS CARDS LOANS TOP-UPS INSURANCES E-FX ORDER PRODUCTS

GONCALO ONOFRE LAZARO GONCALVES 7 min till session expires

Cards Credit card offer

Cards to account Check debit cards offer

Name and number of account	User and card number	Currency	Status	Actions
MASTERCARD PAYBACK Omni 69 1090 2590 0000 0001 2993 2971	G. ONOFRE LAZARO GONC xxxx xxxx xxxx 8026	PLN	New. Please activate!	Activate Limits More

Contact Center 1 9999

Bank Zachodni WBK S.A. in Wrocław, Rynek 9/11, 50-950 Wrocław, entered under KRS no. 0000008723 into the National Court Register kept by the District Court for Wrocław-Fabryczna, 6th Commercial Division, NIP 896 000 56 73, fully paid up share capital PLN 992 345 340.

M 108

12. Benchmarking Analysis with Domestic Competition

Bank Zachodni WBK
Grupa Santander

Mailbox Print Currency rates Settings Help

Logout

DASHBOARD PORTFOLIO TRANSFERS AND PAYMENTS SAVINGS CARDS LOANS TOP-UPS INSURANCES E-FX ORDER PRODUCTS

GONCALO ONOFRE LAZARO GONCALVES 5 min till session expires

TOPPING UP
Topping up
Top-ups list

SETTINGS
Phone numbers
Topping up in BZWBK24 sms

Topping up a pre-paid telephone

1 Data 2 Confirmation 3 End

From account Konto Godne Polecenia 69 1090 2590 0000 0001 2993 2971 0,00 PLN

Topping up a telephone ☒ New number ☐ Defined telephone number

Top-up with e-invoice and check promotions at www.tutajdoladuj.pl

Telephone number (+48)

If you have changed your mobile phone operator, choose one from the following list.

Operator

Remember number ☐ Yes ☒ No

Amount PLN

CONFIRM

M 109

12. Benchmarking Analysis with Domestic Competition

GONCALO ONOFRE LAZARO GONCALVES 6 min till session expires

BUY-BY-CLICK
Cash loan
Credit card
Limit in account
Pay in instalments - Ratio
PLN and fix accounts
Savings account
Cards to account
Card insurance
Deposits
Arka Fund
In Plus BZ WBK
Alerts24
e-FX currency exchange
Registration in PAYBACK

ORDER ALSO
Prepaid cards
Travel insurance
Home insurance
Accident insurance for relatives
Payment Protection security
Investment account

ORDER ON THE PHONE
Contact the advisor

APPLICATIONS
Applications and agreements

WARNING: Currently you've got limited access to purchase options. Please visit the nearest Bank's outlet in order to update your Electronic Banking Agreement and update your ID number.

Order products

CASH LOAN

- ✓ credit decision in 10 minutes
- ✓ long repayment period - even up to 72 months
- ✓ special insurance for the Borrowers [more »](#)
- ✓ możliwość karencji - nawet do 6 miesięcy

Call 1-9999 or **ASK FOR CONTACT »**

CREDIT CARD

- ✓ issuing the main card - PLN 0 (you just have to effect 5 transactions in 3 months)
- ✓ installments in Ratio option (cheap and convenient form of card's debt repayment)
- ✓ with no interest up to 54 days (does not refer to ATM withdrawals) [more »](#)

Call 1-9999 or **ASK FOR CONTACT »**

LIMIT IN ACCOUNT

- ✓ useful in emergencies
- ✓ attractive interest rate
- ✓ automatic repayment with inflows to the account [more »](#)

Call 1-9999 or **ASK FOR CONTACT »**

M 110

13. Comparison Table of the Big 5 against Millenet

	Millenet	iPKO	Pekao	mBank	ING	WBK
Summary of the accounts	✓	✓	✓	✓	✓	✓
Automatic categorization of expenses, revenues (transactions)	✓	?/✗	✗ (Only the type of transaction)	✓	✓	✗
Show the Balance value	✓	✓	✓	✓	✓	✓
Calendarization of upcoming transactions	✓	✗	✗ (Future payment list)	?	✓	?
Savings Plan (based on past behavior)	✓	✗	✗	?	✓	✗
Savings Plan (based on established Goals)	✓	✗	✗	?	✓	✗
Transactions' history	✓	✓	✓	✓	✓	✓
Budgeting options	✓	✗	✗	✓	✗	✗
Spending/Income/Cash-flows by categories (graphical rep.)	✓	✗	✗	✓	✓	✗
Spending/Income/Cash-flows by categories (list)	✓	?/✗	✗	✓	✓	✗
Select in which accounts/products to consult transactions	✓	✗	✗	✓	✓	✗

M 111

14. Meritum Bank case - Personal Finance Manager

An example of an advanced PFM platform is MeritumBank, a Polish bank specialized in serving small and medium-sized businesses.

We'll start the analysis by looking through the History of Transactions

Search option by Type of Transaction, Title of the Operation, Time period and Amount interval

The screenshot shows the MeritumBank PFM interface. The 'History of Operations' section is active, displaying a table of transactions. A red circle highlights the search filters: 'Type of operation' (set to 'All operations'), 'Posting Date' (From: 07.01.2015, To: 01.01.2016), 'Title of the operation', and 'Amount' (From: 0, To: 0). The transaction table lists various outgoing and incoming transfers with dates, titles, amounts, and currencies.

Posting Date	Date of operation	Type of transaction	Title of the operation	Amount	Currency	Balance after surgery
02/01/2015	02/01/2015	Outgoing Transfer	Deposit No. DE 111000134 - foundation 15 1300 0000 3017 7777 9670 0004 JOHN SMITH Street POLNA 1/1 11-222 GDANSK	-129 000.00	PLN	9 471.18
02/01/2015	02/01/2015	Outgoing Transfer	Deposit No. DE 111000133 - foundation 42 1300 0000 3017 7777 9670 0003 JOHN SMITH Street POLNA 1/1 11-222 GDANSK	-100 000.00	PLN	129 471.18
02/01/2015	02/01/2015	Outgoing Transfer	Deposit No. DE 111000132 - foundation 69 1300 0000 3017 7777 9670 0002 JOHN SMITH Street POLNA 1/1 11-222 GDANSK	-100 000.00	PLN	229 471.18
02/01/2015	02/01/2015	Outgoing Transfer	Deposit No. DE 111000131 - foundation 96 1300 0000 3017 7777 9670 0001 JOHN SMITH Street POLNA 1/1 11-222 GDANSK	-90 000.00	PLN	329 471.18
02/01/2015	02/01/2015	Incoming transfer	feed on deposits	400 000.00	PLN	419 471.18
02/01/2015	02/01/2015	Incoming transfer	shopping 11 1300 0000 2076 7777 9625 0001 JAN NOWAK Street POLNA 1/1 11-222 GDANSK	3.00	PLN	19 471.18
02/01/2015	02/01/2015	Incoming transfer	shopping 11 1300 0000 2076 7777 9625 0001 JAN NOWAK Street POLNA 1/1 11-222 GDANSK	3.00	PLN	19 468.18
02/01/2015	02/01/2015	Incoming transfer	shopping 11 1300 0000 2076 7777 9625 0001 JAN NOWAK Street POLNA 1/1 11-222 GDANSK	3.00	PLN	19 465.18

M 112

14. Meritum Bank case - Personal Finance Manager

Once the user clicks on one transaction in the history of Transactions, he is directed into a window with the details of the operation.

The screenshot displays the 'Details of the operation' window in the Meritum Bank PFM. The interface includes a sidebar with navigation options like 'Your recipient', 'Conclusions and dispositions', 'Mobile banking', and 'Notifications'. The main content area shows the account number (18 1300 1078 2011 7777 9670 0001) and the personal account name 'Earning MeritumKonto'. The available resources are 9 461.18 PLN. The transaction details include the type 'Outgoing Transfer', posting date '01.02.2015', and implementation date '02.01.2015'. The sender is JOHN SMITH, POLNA 1/1 11-222 GDANSK, and the recipient is JOHN SMITH Street POLNA 1/1 11-222 GDANSK. The amount of the operation is -120 000.00 PLN, and the title is 'Deposit No. DE\11000134 - foundation'.

M 113

14. Meritum Bank case - Personal Finance Manager

But the real essence of Meritum Bank's PFM doesn't rely on the merits of the Transactions tab, but rather on the features of MeritumPlaner.

The screenshot displays the 'Realizacja budżetu' (Budget realization) dashboard. It provides a clear overview of the user's financial health, including the sum of funds on hand (434 257.78 PLN) and the budget's used and unused amounts. The dashboard is divided into several sections: 'Twoje finanse' (Your finances), 'Realizacja budżetu' (Budget realization), 'Prognostyka budżetu' (Budget forecast), and 'Twoje cele zakupowe' (Your purchase goals). The 'Realizacja budżetu' section shows the budget's used amount (6 000.00 PLN) and the unused amount (6 000.00 PLN). The 'Prognostyka budżetu' section shows the budget forecast for the next month, with expenses of 2 265.50 PLN and income of 2 500.00 PLN. The 'Twoje cele zakupowe' section shows the user's purchase goals, with a target of 6 000.00 PLN and a current status of 0% realization.

Comment: This dashboard displays a very clear overview of the user's financial health, where he is spending more and if he is spending too much.

Accounts

Other accounts including loans and deposits

My portfolio

Sum of the financial status

Budget forecast for the next month

Expenses

Income

Budget's used amount

Budget's unused amount

Exceeded the limit

M 114

14. Meritum Bank case - Personal Finance Manager

I couldn't find more screenshots of the browser version of Meritum Bank's platform but, according to their website, their PFM has the following features:

- Checking **current Balance** and **Transaction history** of all accounts associated with the user
- Possibility of **exporting the History of Operations** or generate a **Certificate of Completion of Transfer**
- Meritum Planner carries out a **detailed analysis of spending** in order to **effectively manage it for the future** (much like Millennium's Saving Plan).
- It **automatically groups Expenses**.
- It caters **Saving possibilities** for both **short-term and long-term**.
- Possibility of specifying a **Budget for each group of expenses** (much like the Add New Budget function at the Budget tab of Millenet's PFM).
- **Purchasing Goals** – The system tells the user what he needs to set aside each month to accomplish established further-spending objectives (one-time expense)

We can safely conclude from this info that Meritum Bank is one of the most advanced banks in Poland concerning its PFM. In comparison with the Big 5, it stands as a very competitive and advanced tool (at the level of ING and mBank probably).

15. KIWIBANK

- KIWIBANK is a state-owned New Zealander bank. Their online service, generally, is not groundbreaking in terms of Innovation on the online platform (in comparison with Millenet already has to offer) but **has a few features that could be of big interest for any bank to adopt**.
- Although KIWIBANK in itself doesn't provide a Budgeting tool, it indicates some tips to keep finances on track and stick to the budget:

(taken from their website directly)

Sticking to your budget

- Now that you've got your budget sorted, it's time for the hard part – sticking to it! If you can, set up payments to come out of your account the day after payday – that way you know you'll always have the funds, so you'll avoid the risk of fees for failed payments.
- Make use of services on offer from your bank to help you manage your money. At Kiwibank, some of the options you may find useful include:
- **VISA DEBIT CARD** – works just like your ATM/EFTPOS card, but you can also use it online, over the phone and overseas. It uses money straight from your everyday account, so you can't spend more than you have.
- **PAYSTREAM** – splits your pay into different accounts (e.g. transaction account, bills account) before you even see it.
- **ALERTS** – get an email or TXT from us to let you know when key things happen on your account, like a failed automatic payment. This gives you time to make a deposit before we try the payment again the next day, so you can avoid penalty fees.
- **SWEEP & DYNAMIC SWEEP** – set up your accounts to automatically sweep money between them so your money is exactly where you want it to be.
- **AUTOMATIC PAYMENTS, BILL PAYMENTS, DIRECT DEBITS** – set up payments to go out, or be automatically taken out of your accounts on specified dates.
- Remember that if you've got an automatic or future payment set up and it falls on a public holiday, the payment won't be put through until the next business day.

From these suggestions, I'd say the **Client Alert** (via email or SMS) is the one with the most potential to work. This suggestion **goes along what Simple and Moven already do**: notify the customer on every transaction he makes and show the balance after the transaction fact.

15. KIWIBANK

■ The PayStream feature

"With PayStream, your pay can be split to go wherever you need it — before you even see it."

- The objective is to allocate the user's Income, automatically, to whatever account the user decides, according to his objectives (Savings account, everyday account, etc.). By setting aside money before the client even sees it as available in his current balance, it will be easier for him to achieve his Saving Goals.
- The user can choose to split a certain percentage of the pay/income, or a dollar amount.
- Kiwibank **doesn't cater this service for free**: its only free for 30 days after the user opens his account and then there's a 3\$ set up or change fee.



M 117

15. KIWIBANK

■ The Sweep feature

"Make sure you always have money where you need it. You can choose to automatically sweep money to or from different accounts when they reach your chosen minimum or maximum amount."

- The user selects a minimum and maximum amount to keep in his everyday account. Everything over the maximum is automatically transferred (swept) into another nominated account. This helps the user save and earn maximum interest, or keep money aside for bills.
- If the balance falls below the selected minimum, money is swept back from another account, so there's always enough for everyday expenses.
- Sweeps occur at the end of each day.
- Again, this service isn't **Free**: although Free for the first 30 days after opening an account, after that period there's a \$3 "set-up or change fee"



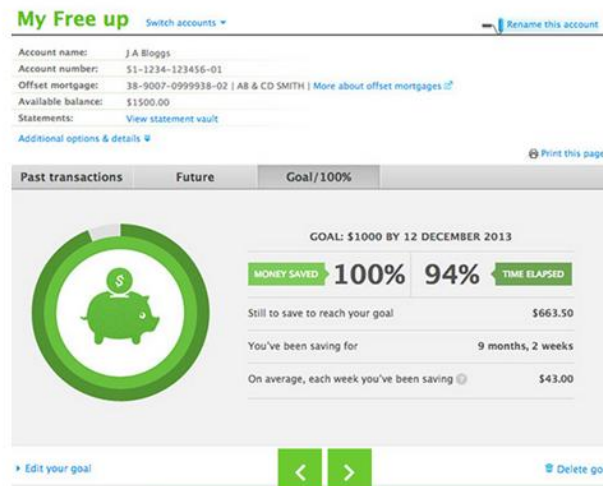
M 118

15. KIWIBANK

■ The Goal Tracker feature

"Make sure you always have money where you need it. You can choose to automatically sweep money to or from different accounts when they reach your chosen minimum or maximum amount."

- The feature is equal to every other Goal Saving feature (the user selects the amount to save and the time-frame and the service allocates money for that, each day). What may be interesting about this feature is the visual representation of the outcome:



M 119

15. KIWIBANK

■ The Automatic Payment feature

"Automatic payments are perfect for paying fixed amounts regularly, like your rent or savings."

- The user can set these payments to happen as often as he wishes: weekly, fortnightly, monthly, six monthly, annually or on a certain date of a certain month.
- The user can also set an end date to these automatic payments.
- The user can align this feature with others that Kiwibank provides: Sweep & TXT or email alerts. With these, the user can receive alerts when there's less than a certain amount of money in a given account and sweep money from one account to another in order to **have the money ready at the right place at the right time when the Automatic Payment occurs.**



M 120

15. KIWIBANK

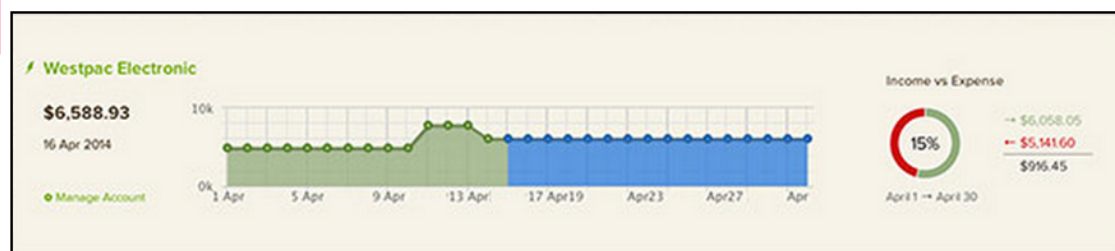
■ The Alerts feature

"Get a free text or email when key things happen on your accounts."

- The user can choose to be sent a notification by email or text message when certain things happen in his account. These are:
 - The account balance falls under a set limit
 - The user receives deposits over a certain amount
 - A regular automatic payment can't be paid - usually because there isn't enough money in the account. Kiwibank will try the payment again the next business night, so this alert gives the user a chance to transfer some money and avoid a dishonour fee. The user will also get this alert if a scheduled one-off payment fails.
 - A regular automatic payment or a scheduled one-off payment dishonours after failing for the second consecutive time
 - A direct debit fails because there isn't enough money in the account.

16. The PocketSmith Income vs. Expenses bar

PocketSmith developed a bar of Income vs. Expense for a given time period which displays a percentage of how bigger one item is in relation to the other.



The formula to get to the percentage is:

$$\frac{\text{Income} - \text{Expense}}{\text{Income}}$$

This slightly different display in comparing Income to Expense might be useful for some users, as some prefer to see a number as indication of their financial health instead of a mere bar.

The competitive advantage of PocketSmith, however, is not this simple bar but rather its flexible budgeting options.

PocketSmith analyses current spending and on this basis it creates a "projection of future balances". This budget can be done for every time span (day, week, month, etc.) and starting at any day the user wishes.

17. CONCLUSIONS

- All in all, it's easy to note that Millenet stands out in the Polish domestic market as the best online platform in the market, outweighing the big 5's in quality. Millenet is also well positioned in comparison with other foreign PFM providers but lacks a few features that will prepare the platform to be amongst the best in the near future. These are:

- **1. Adapt Simple's Safe-to-Spend notion to Millenet**, with a new table in the PFM's Main Dashboard displaying this different kind of balance. The feature shouldn't be exactly like Simple's (because of the problem explained on slide 21) but rather a "What can I spend today?" tool.

EXAMPLE: A client has 10 000 PLN in his account, a saving goal worth 300 PLN in 30 days and an upcoming expense worth 500 PLN in 10 days. What would be the "What can I spend today?" value?

$$\text{SOLUTION: } \frac{10\,000 - (300 + 500)}{30 \text{ days}} = 306, (7) \text{ PLN}$$

The trick here is to pick wisely the time frame for the calculation. We should go for the number of days until the last expense/saving goal is paid/accomplished. Here, is 30. Then, we take the Current Balance and subtract all the expenses the time frame encompasses. Finally, we divide the aforementioned subtraction for the number of days and get the Average amount of expenditure p/ day so that the upcoming spendings/goals aren't jeopardized.

- In alternative to this, there could be a Money Vault like GoBank has, wherein the user can storage his money at any given time.



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17. CONCLUSIONS

- **2. Real-Time Notification of Spendings and Balance Status (+ Qualitative Feedback**, a la MOVEN's MONEYPULSE → compare the current month's spending to the average monthly spending)
- **3. Timeline representation of what Saving Goals are left to achieve** and display of those which were achieved already (a la SIMPLE.com)
- **4. Adapt iGaranti's iWallet solution** for online payments and those in physical stores (using the QR codes).
- **5. Adapt iGaranti's SmartShopping solution** also in conjunction with the social network FourSquare.
- **6. Have less categories for expenses** → SIMPLE.com has just 9, whilst Millenet has 16, which then are sub-categorized into 96 (!)
- **7. Base the SmartWatch approach on Instant feedback on Income & Expenses and on the Real-Time current balance** display everytime there's a movement in the account.
- **8. By default, notify customer on every movement in the Account** (or in Limit-situations, like having the balance approaching 0). In addition, **let the user edit which movements he wants to be notified of**, according to his personal preference and the bank's criteria (like KiwiBank does with its alerts).
- **9. Have a Sweep feature** (based on Kiwibank's) to **swap money from one account to another** (of the same user) in case the limits (of minimum and maximum money to have in each account) are crossed.



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17. CONCLUSIONS

- **10.** Adapt **ING's Smart Saver** to Millenet: have a tab which enables the user to allocate a certain selected percentage of a transfer to a savings account
- **11.** There could be a bar **comparing Income and Expenses in percentage**, like PocketSmith has. This way, the user would have a clearer vision of how bigger one category is in comparison with the other.
- **12.** Have a feature like **Kiwibank's PayStream**, which takes some part of the user's income automatically to a Saving spot before he even sees it. The user, with this feature, could determine which percentage or amount of income would be destined to this Savings spot

17. CONCLUSIONS

- **Some other conclusions can be drawn from a Commonwealth Bank of Australia report. This report is based on an initiative called IdeaBank, whereupon the bank's employees contribute with ideas to develop the bank itself in exchange for potential rewards (if the idea is well-accepted).**
- **The report highlights some ideas for Online Banking as stand out for the next few years:**
 - View Receipts online automatically
 - Have a **Family Personal Finance Manager**: a same tool of this sort for Saving Goals common to all the family (Joint Goals and/or Joint Accounts)
- **Miscellaneous Suggestions:**
 - (Based on Garanti's iGaranti service) iGaranti connects Facebook, Twitter and FourSquare to help users send money to friends and family. Millennium could do something similar.
 - The **iGaranti** feature is described by the website BankingTech.com in the following: "users will send payments to friends via Facebook, tweet relevant offers on Twitter and redeem location-based shopping offers while on the move. The service includes hands-free voice control for money transfers, a mobile wallet to make in-store payments from multiple credit cards, use of QR codes at point of sale, and mobile cash withdrawal. An avatar is attached to the top of every page, which can give advice based on what the user is doing."
 - **(a bit redundant)** Millennium should improve its online PFM tool by advancing their Near-Field Communication payments' policy, turn their saving tools into more intuitive and helpful mechanisms for the customer and improve the way of notify customers on their account movements (all in an effort to help the client best control his finances).

ANNEX 8: SURVEY USED TO GATHER ANSWERS AND ITS RESULTS

Default Question Block
Block Options

Q1

The quick following survey - lasts 5 minutes to fill - aims at accessing Polish people's interest in possible improvements of Millennium Bank's Homebanking platform. The goal here is to check if there is demand for those improvements.

What is your favorite channel to perform banking-related tasks?

☐ Online
☐ Branch
☐ Phone

Q2

Have you ever used a homebanking platform?

☐ Yes
☐ No

Q3

If yes, how many times a week do you access your account's homebanking platform?

☐ 4X a week
☐ 3X a week
☐ 2X a week
☐ 1X a week
☐ Less than 1X a week
☐ I never accessed a homebanking platform

Q4

How would you rate your experience as a user of an Online Homebanking platform?

☐ Excellent
☐ Very Good
☐ Good
☐ Fair
☐ Poor
☐ Very Poor
☐ I never accessed a homebanking platform

Q5

Bank Millennium is considering introducing a new **Safe-to-Spend** tool to be used as part of their Personal Finance Manager tool. This innovative feature would indicate a daily Safe-to-Spend balance value: **the amount of money in the account the user can spend daily without jeopardizing upcoming expenses and Saving Goals chosen by himself.**

How interested would you be in this feature?

☐ Very Interested
☐ Somewhat Interested
☐ Not much interested
☐ Not Interested at all

Q6



Bank Millennium is also considering introducing a new **Alerts** feature which gives instant notice to the user, when a **current monthly expense in a certain category is about to reach the average monthly expense in that same category**. This would hopefully help the user manage his expenses in a most rational way. The alert would be accompanied by a circular bar similar to the one shown below.



You've spent
\$124
so far this month
(Average \$0)

How you compare
\$124 ↑
You're currently \$124 above your
typical spend.

Q7



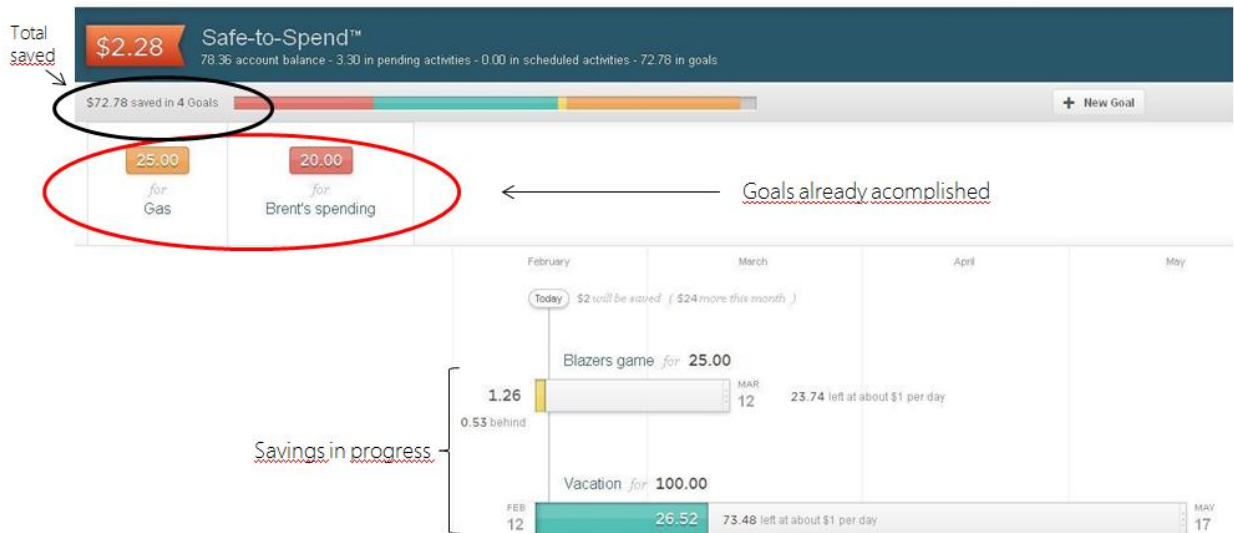
How interested would you be in the before-mentioned feature?

- ☐ Very Interested
- ☐ Somewhat Interested
- ☐ Not much Interested
- ☐ Not Interested at all

Q8



Plus, Bank Millennium is taking into consideration a new **Savings Goals** feature wherein the **user can define a certain amount to save and the time to achieve it**. The platform would then present a daily-updated progress on the Savings through colored timelines, each indicating what amount of money is necessary to reach the goal identified. The layout of this feature would be somehow similar to the following:



Q9



How interested would you be in this feature?

- ☐ Very Interested
- ☐ Somewhat Interested
- ☐ Not much Interested
- ☐ Not Interested at all

Q10 ☐

 ▼

One of the other features Bank Millennium is considering implementing is a **Sweep feature**, destined for clients with more than one account in Millennium. The feature **lets the user select a maximum and minimum amount to keep in his everyday's account**. If one of these boundaries is surpassed, money is exchanged automatically between account to make sure the user has his money where he wants it to be.

How interested would you be in this feature?

- ☐ Very Interested
- ☐ Somewhat Interested
- ☐ Not much Interested
- ☐ Not interested at all

Q11 ☐

 ▼

Moreover, Bank Millennium is also considering another addition to its Personal Finance Manager tool, again destined for users with more than one account in Millennium. **This feature splits any Income gotten between different accounts, as determined by the user, according to a percentage or an amount he/she wants to allocate to certain account(s)**. This split is done instantly, which means the user sees the money only after the actual separation occurs. This split would be especially useful for users who have an account destined for everyday expenses and another for Savings.

How interested would you be in this feature?

- ☐ Very Interested
- ☐ Somewhat Interested
- ☐ Not much Interested
- ☐ Not Interested at all

Q12 ☐

 ▼

Do you think these suggestions, if all implemented, would significantly improve your homebanking experience?

- ☐ Yes
- ☐ No

Answers to the Questions:







1.

#	Answer		Response	%
1	Online	<div></div>	31	86%
2	Branch	<div></div>	3	8%
3	Phone	<div></div>	2	6%
	Total		36	100%







2.

#	Answer		Response	%
1	Yes	<div></div>	32	89%
2	No	<div></div>	4	11%
	Total		36	100%





3.

#	Answer		Response	%
1	4X a week		6	17%
2	3X a week		4	11%
3	2X a week		6	17%
4	1X a week		5	14%
5	Less than 1X a week		11	31%
6	I never accessed a homebanking platform		3	9%
Total			35	100%





4.

#	Answer		Response	%
1	Excellent		4	11%
2	Very Good		11	31%
3	Good		16	44%
4	Fair		2	6%
5	Poor		1	3%
6	Very Poor		0	0%
7	I never accessed a homebanking platform		2	6%
Total			36	100%





5.

#	Answer		Response	%
1	Very Interested		4	11%
2	Somewhat Interested		19	53%
3	Not much interested		12	33%
4	Not Interested at all		1	3%
Total			36	100%





7.

#	Answer		Response	%
1	Very Interested		7	19%
2	Somewhat Interested		24	67%
3	Not much Interested		4	11%
4	Not Interested at all		1	3%
Total			36	100%





9.

#	Answer		Response	%
1	Very Interested		10	28%
2	Somewhat Interested		16	44%
3	Not much Interested		8	22%
4	Not Interested at all		2	6%
	Total		36	100%

10.

#	Answer		Response	%
1	Very Interested		8	22%
2	Somewhat Interested		17	47%
3	Not much Interested		9	25%
4	Not interested at all		2	6%
	Total		36	100%

11.

#	Answer		Response	%
1	Very Interested		8	22%
2	Somewhat Interested		17	47%
3	Not much Interested		9	25%
4	Not interested at all		2	6%
	Total		36	100%

12.

#	Answer		Response	%
1	Yes		30	83%
2	No		6	17%
	Total		36	100%